

April 1996

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James Mountain Road

from Gateview Drive to Inglewood Drive

URBAN MUNICIPAL

APR 10 1996

GOVERNMENT DOCUMENTS

SPECIAL PROJECTS OFFICE

Transportation Department

Region of Hamilton-Wentworth

25 Main Street West, 10th Floor

Hamilton, Ontario, L8P 1H1

ENVIRONMENTAL STUDY REPORT

Region of Hamilton-Wentworth



EXECUTIVE SUMMARY

James Mountain Road is in need of repair and has undergone the planning and design process known as a Schedule 'C' Class Environmental Assessment.

The specific problems that are addressed in the process are slope instability, poor drainage, motorist and pedestrian safety concerns and inadequate traffic operations and safety. Although solutions and design alternatives for each of the problems are not necessarily mutually exclusive, each problem has been addressed individually, with a eye to integrating the final product.

The objectives of this study are to consider various transportation solutions and corresponding designs that fully address the problems identified; to ensure that the preferred design meets the future needs of the community; to minimize any impacts that the preferred alternative will have on the character of the road; to minimize environmental impacts and mitigate those impacts that cannot be avoided; and to incorporate the policies of Vision 2020, the Regional Official Plan and the Niagara Escarpment Plan.


The Region and participating stakeholders determined a reasonable range of planning solutions (ways of dealing with the problems) for each of the identified problems. Evaluation of the planning solutions considered the impacts on all environments. Evaluation factors or indicators that were used to rank solutions were generated through consultation with the various stakeholders. The preferred solutions for the slope stability, drainage, pedestrian safety and traffic operations/safety problems are construct a retaining wall, install a storm sewer, 'do nothing' and reconstruct with wider lanes and some minor realignment, respectively.

The planning solutions to a certain extent, dictate the requisite elements of the roadway that are usually determined in design. Therefore, the majority of the effort in identifying and selecting design alternatives focuses on determining the dimensions of the elements of the roadway, and assessing the environmental impacts. Again, evaluation factors considered all environments.

The preferred design for James Mountain Road includes a cross-section that consists of two 3.5 metre lanes, curbs on both sides of the road and a guide rail all within a 8.5 metre platform width. The reconstructed road follows basically the same alignment, except for a flattening of the curve at the brow of the escarpment. All requisite widening (i.e, property taking) are to the north of the existing road. The fundamental tenet observed during the selection of an alignment is to use as much of the already disturbed area as possible without impacting on the visual character of the uphill (south side) slope.

The impacts to the visual character are to be mitigated as much as possible through a revegetation plan and selection of a guide rail, retaining wall and lighting that compliment the environment. Stakeholder consultation will play a key role in the development of mitigation measures.

Stakeholder consultation met or exceeded the minimum legislative requirements outlined for the Class EA process. Regional and municipal offices, and interested agencies were assembled into a Project Team to guide the project. Other stakeholders and members of the public were kept informed of the project and given an opportunity to participate through Project Update newsletters mailed directly to area residents, newspaper advertisements and a series of Workshops/Public Information Centres. In addition, Regional staff attended meetings of special interest groups, met with individual property owners upon request, discussed the project on the telephone and corresponded with stakeholders through the mail.



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**JAMES MOUNTAIN ROAD - GATEVIEW DRIVE TO INGLEWOOD DRIVE
ENVIRONMENTAL STUDY REPORT**

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CHAPTER 1

Introduction

1.0 INTRODUCTION

This Environmental Study Report (ESR) documents the decision-making process that took place between February 1995 and March 1996 which has resulted in the Region's proposal to reconstruct James Mountain Road with minor improvements in width and alignment. The views and opinions of individuals, interest groups and government agencies directly and indirectly affected by the proposal have contributed significantly to the preferred roadway design.

1.1 ENVIRONMENTAL STUDY REPORT

Municipalities in Ontario that undertake road projects are subject to the provisions of the Ontario Environmental Assessment Act (EA Act). The requirements of the EA Act can be met by following the planning process outlined in the Municipal Engineers Association Class Environmental Assessment for Municipal Road Projects document (revised June, 1993). The Class Environmental Assessment (Class EA) process requires the Regional Municipality of Hamilton-Wentworth to prepare and submit for public review, an Environmental Study Report (ESR). The ESR documents: problems or opportunities the project addresses; consideration of alternatives solutions and designs; impacts to the environment (i.e., natural, social, economic, cultural and transportation); and stakeholder consultation.

This ESR is organized in the following way:

Chapter 1	introduces the study and describes how the report is organized;
Chapter 2	documents the steps followed to arrive at a preferred roadway design, project team organization, and the stakeholder consultation program;
Chapter 3	describes the existing and future natural, socio-economic, cultural

and transportation conditions which may be impacted by the project;

Chapter 4	identifies the problems this study attempts to resolve;
Chapter 5	examines alternative solutions to the problems identified in Chapter 4;
Chapter 6	examines ways the preferred solution can be implemented (alternative designs); and
Chapter 7	describes the preferred way (design) of solving the problem and the commitments the Region will undertake as part of this project.

1.2 BACKGROUND

James Mountain Road is located within the City of Hamilton in the Regional Municipality of Hamilton-Wentworth (see Figure 1). It is owned and operated by the Region of Hamilton-Wentworth.

James Mountain Road is one of six arterial roads crossing the Niagara Escarpment within the City of Hamilton (Figure 2). This two lane Regional roadway links two other arterial roads running through the core of the City, West 5th and James Streets (see Figure 3). James Mountain Road is a vital escarpment crossing route for Hamilton commuters.

1.3 PROJECT HISTORY

Over the years, the condition of James Mountain Road has slowly deteriorated. In 1989, a design for the reconstruction of James Mountain Road was prepared by Philips Planning and Engineering Limited for the Region. The proposed design included minor realignment, widening of the roadway and construction of a retaining wall on the north (downhill) side.



FIGURE 1
PROJECT LOCATION

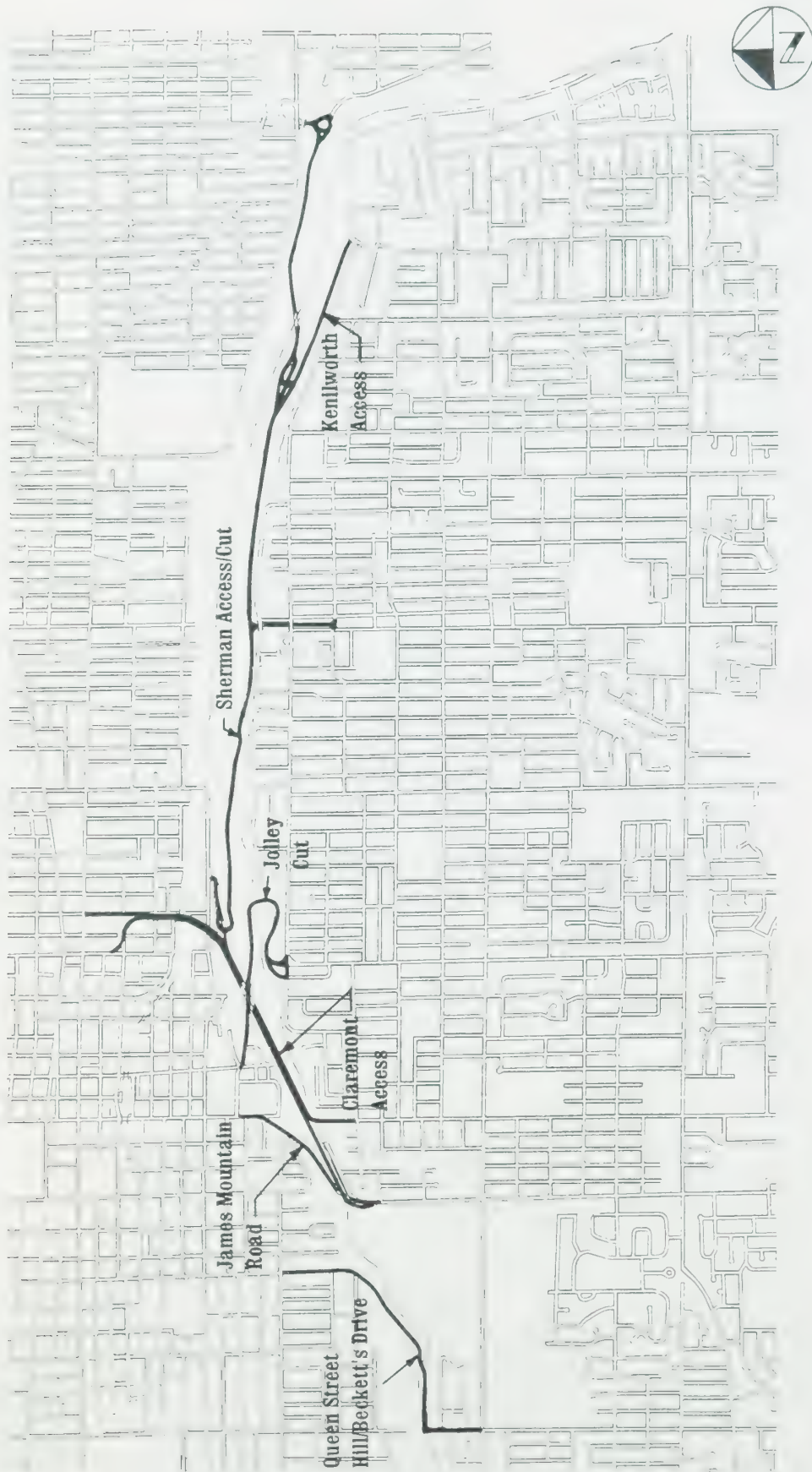
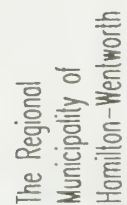


FIGURE 2
CENTRAL HAMILTON ESCARPMENT CROSSINGS



**Philips
Planning
+ Engineering
Limited**

FIGURE 3 STUDY AREA MAP



Public Information Centres held August 3, 1989 and January 29, 1990, provided interested parties an opportunity to comment on the proposed roadway design. Shortly after the last information centre, the project was put on hold by Regional Council. This action was in response to public concerns about the uncertain role of James Mountain Road in the Region's transportation strategy for escarpment crossing, and to wait for input from the Regional Transportation Review.

In the autumn of 1994, following the collapse of a small retaining wall on the downhill side of James Mountain Road, further deterioration of existing slopes, and the substantial completion of the Regional Transportation Review, Regional Council authorized staff to identify and resolve problems associated with James Mountain Road. Specific details of the Regional Transportation Review are discussed in Chapter 3.

1.4 THE STUDY AREA

The study area is James Mountain Road, and the contiguous property, from Gateview Drive to Inglewood Drive (see Figure 3).

1.5 THE STUDY EXTENSION - INGLEWOOD DRIVE TO ST. JOSEPH'S DRIVE

Early in the consultation for this project, several members from the local neighbourhood expressed a desire to extend the northern study limit from Inglewood to St. Joseph's Drive. The portion of James Street from Inglewood Drive to St. Joseph's Drive is hereinafter referred to as the 'study extension' (see Figure 3). The public indicated that this area experiences traffic operation and safety problems which should be addressed at the same time as the problems associated with James Mountain Road. Moreover, there are concerns regarding a lack of adequate drainage in the study extension. The Project Team agreed to change the scope of the investigation to include the problems in the extended study area.

Traffic Operations

The study extension includes the intersection of James Street at Markland Street. In November 1991 a 'no left turn' from 7 am to 9 am on weekdays regulation was erected for northbound traffic at this location. In February 1995 the City of Hamilton's Transport & Environment Committee directed City staff to hold a public meeting regarding the regulation. Since, the Region was already studying this area, Regional staff assumed the consultation responsibilities. Time was scheduled at the second and third public workshops for this project to discuss the part-time 'no left turn' regulation.

The results of the Project Team's investigations in to traffic-related problems in the study extension are documented in a technical report titled 'Traffic Operations on James Street From Inglewood Drive to St. Joseph's Drive'. The technical report is independent from this document because the problems and/or solutions identified are fundamentally different from those identified in the study area. The Class EA permits the different planning and design process for the study extension based on the limited environmental impacts of the identified solutions.

According to the Class EA, the installation of traffic control devices such as prohibition signs and other nonstructural alterations, are approved activities (Class EA, Page 90). In other words, the Region may install new signs without public consultation and documentation of rationale since the environmental effects are limited in scale and generally predictable. However, in recognition of the mixed public reaction to potential changes, and the turn prohibition in particular, the public was given the opportunity to comment on Regional actions and initiatives at all of the public meetings.

An information report respecting the left turn prohibition was presented to the City's Transport & Environment Committee on November 20, 1995. The Transport & Environment Committee can not make decisions on this regional issue. Therefore, the report outlined

the issues surrounding the left turn prohibition and the results of the public consultation. A similar information report was presented to the Region's Transportation Services Committee on February 26, 1996.

Once the Regional Transportation Review is adopted by Regional Council, Regional staff will *recommend* a course of action to the Transportation Services Committee, respecting the 'no left turn'. It is incumbent on the individual to ascertain the date and time of the Transportation Services Committee meeting that will deal with this issue. There will be no further direct mailings or newspaper advertisements regarding the 'no left turn' or any other work to be done in the study extension, as part of this project.

Drainage Concerns

The investigation into the drainage problems in the study extension are also documented independently from this ESR. Again, the reason for separating the study extension from the study area is the fundamentally different solutions and the associated, minor environmental impacts. Documentation on the investigation into the drainage concerns in the study extension are on file at the Region.

1.6 SUPPORTING STUDIES

As part of James Mountain Road project, the Region has carried out the following studies:

- Environmental Inventory and Visual Assessment (Dogan and Associates, August 1995);
- Roadway Noise Impact Study (S. S. Wilson and Associates, June 1995);
- James Mountain Road Heritage Assessment (Unterman McPhail Cuming Associates, August 1995); and
- Phase I Environmental Site Assessment,

James Mountain Road Scout House (Peto MacCallum Limited, July 1995).

In addition, this project used information and data from the following studies and design work:

- topographic survey information from the James Mountain Road Detailed Design Proposal (Philips Planning and Engineering Limited, 1988);
- geotechnical investigation, James Mountain Road Reconstruction (Peto MacCallum Ltd., 1989); and
- geographically related information and features from the Region's Parcel Related Computer Information Library (PaRCIL) Project.

1.7 PUBLIC REVIEW OF THE ENVIRONMENTAL STUDY REPORT

This ESR has been filed for a thirty (30) day public review period at the following locations:

- Region of Hamilton-Wentworth Clerk's Office, 119 King Street West, 15th Floor;
- City of Hamilton Clerk's Office, City Hall, 71 Main Street West, 2nd Floor;
- Central Branch of the Hamilton Public Library, 55 York Boulevard;
- The Terryberry Library, 100 Mohawk Road West;
- The Regional Transportation Department's Special Projects Office, 25 Main Street West, 10th Floor; and
- The Special Projects Office's Computer Bulletin Board at 905-546-4083 (24 hours a day access, 7 days a week).

The public has been notified of the 30 day review

period by advertisements in the Hamilton Spectator (April 10 and 13, 1996) and the Hamilton Mountain News (April 10 and 17, 1996). Individuals and agencies that indicated an interest in the project were notified by a direct mailed newsletter (i.e., James Mountain Road Project Update, Issue No. 5).

The 30 day review period is from April 10, 1996 to May 10, 1996.

If, after reading this document, you have questions or concerns please contact the following Regional staff:

Gerry Forbes, Project Manager

or

Chris Murray, Environmental Planner

Special Projects Office

25 Main Street West

Hamilton, Ontario

L8P 1H1

Phone: (905)546-4277

Fax: (905)546-2385

send a copy of the bump-up request to the Transportation Department.

If all concerns can be resolved within the 30 days, the Region will have approval to proceed with construction.

The procedure for dealing with questions and/or concerns is as follows:

1. Indicate the specific nature of your question and/or concern so that both parties can determine if a meeting is required or if a simple verbal/written response will do.
2. If more serious concerns are raised that challenge the selected design, both parties will establish a mutually acceptable time period to resolve the conflict. If, at the end of this period serious concerns remain unresolved, you may ask the Minister of the Environment and Energy to subject this study up to a more intensive environmental assessment and government review. If the end of the mutually acceptable time period extends beyond the 30 day review period, you have an additional 7 calendar days to make a request to the Minister. The request to the Minister to undergo a more intensive review is called a "bump-up" request. You must also

CHAPTER 2

The Class Environmental Assessment Process

2.0 THE CLASS ENVIRONMENTAL ASSESSMENT PROCESS

The purpose of a Class EA is to promote the protection and conservation of the environment through comprehensive planning and informed decision-making. It allows for the evaluation of environmental effects of alternatives to a project and alternative methods of carrying out a project. Public consultation is mandatory at three points in the process: review of planning solutions; review of design alternatives; and review of the ESR.

Environment is defined in the EA Act as:

- air, land and water;
- plant and animal life including humans;
- the social, economic and cultural conditions that influence the life of humans or the community;
- any building, structure, machine or other device or thing made by humans;
- any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of humans; and
- any part of the foregoing and the interrelationships between any two or more of them in or of Ontario.

The key requirements to successful Class EA planning are:

- consideration of reasonable alternatives;
- consideration of all aspects of the environment;
- systematic evaluation of net environmental effects;
- clear and complete documentation; and
- consultation with affected parties.

2.1 SCHEDULE OF ROAD PROJECTS

Municipal road projects are divided into three schedules or classes depending on their expected level of impact.

Schedule A Projects are limited in scale, have

minimal adverse impacts, and require no documentation or public notification. Examples of Schedule A projects are sign installation, road paving, snow removal, emergency repairs, and local intersection improvements.

Schedule B Projects exhibit the potential for some adverse impacts, require that a planning process be followed, require mandatory contact with directly affected public, and require a submission of project file for public review. Examples of Schedule B projects are new culverts, and minor reconstruction.

Schedule C Projects exhibit potential for a number of adverse effects, require that a planning process be followed, require mandatory public notification, and require submission of an Environmental Study Report for public review. Examples of Schedule C projects are new roads, and road widenings.

This project has been identified and planned as a Schedule C.

2.2 PLANNING PROCESS

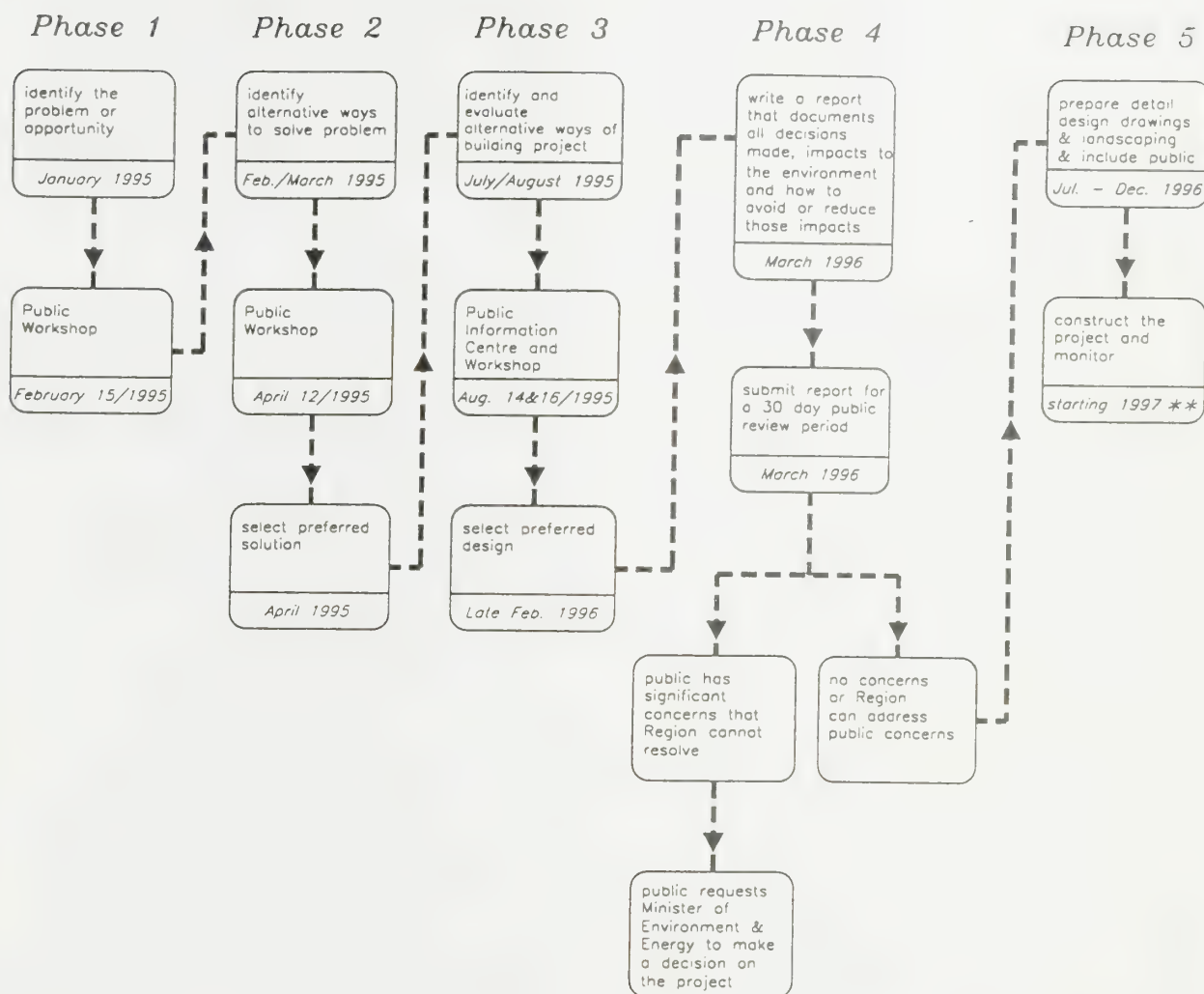
The Region has followed the Class EA planning process shown in Figure 4. The following is a brief explanation of this process.

Phase I: Problem Identification

This phase includes identifying all of the current and expected problems with the road. Typical sources of information are the Roads Needs Study/Infrastructure Management System, the collision record, existing and projected traffic volumes, maintenance records, and consultation with municipal departments, agencies and the public.

Phase II: Planning Solutions

In this phase, all reasonable solutions to the problems are identified and evaluated, and a preferred solution is chosen. Since there is usually more than one way to solve a problem, solutions are compared to determine which solution best



* adapted from "Class Environmental Assessment for Ontario Road Projects", June 1993

** subject to approvals and funding

FIGURE 4
CLASS ENVIRONMENTAL
ASSESSMENT PLANNING PROCESS

meets the objectives of the study. The best (or preferred) solution is carried forward into Phase III (the design phase). Also in this phase, data and information about the environment is collected to assist in comparing the solutions. A preliminary evaluation of the solutions is presented to the public and agencies and their comments are taken into consideration before a preferred solution is chosen.

Phase III: Design Alternatives

Just as there is usually more than one way to solve a problem, there is generally more than one way to implement a solution. The design phase is the first step towards implementation of the preferred solution and involves locating, sizing and detailing elements and features of the road. In this phase, design alternatives are evaluated and compared, additional data may be collected and the most reasonable alternative is identified. Again, the public and agencies are invited to review the evaluation of design alternatives, to comment on the process and to help select the preferred alternative.

The process of comparing planning solutions and design alternatives sometimes requires trade-offs between providing a safe and efficient transportation system and impacts to the environment. In all cases, the objective is to select an alternative that minimizes impacts to the environment and meets the transportation objectives. The public has the ability to influence this decision-making by reviewing the work prepared for each phase and by providing information that will be useful in the evaluation.

Phase IV: Environmental Study Report

In this phase, the decision-making process, the preferred plan and the associated impacts are documented for the public to review. The ESR serves as the plan for any future road construction defined by the study. Commitments made in this document are legally binding on the municipality.

Phase V: Construction and Monitoring

Following approval of the Class Environmental Assessment, detail design drawings and tender documents are completed based on the plan in the ESR. Contracts are awarded, construction occurs and the finished product is put into operation. The commitments made in the ESR, to be fulfilled during construction and operation are carried out in this phase.

2.3 PROJECT ORGANIZATION

This project was managed by the Special Projects Office (SPO) of the Regional Municipality of Hamilton-Wentworth's Transportation Department. This office is responsible for coordinating all aspects of the project's planning and preliminary design. For the purpose of providing integrated decision making, a Project Team was assembled with the following individuals:

Region of Hamilton-Wentworth

Gerry Forbes	Project Manager (Transportation)
Pamela Hubbard	Environmental Planner (Transportation)
Chris Murray	Environmental Planner (Transportation)
Mary Lou Tanner	Planner I (Planning and Development)
Geoff Aston	Director of Programming & Development (Transportation)
Bill O'Brien	Director of Transportation Services (Hamilton Street Railway Co.)

City of Hamilton

Hart Solomon	Manager of Operations (Traffic)
Reg Meiers	Operations Engineer (Public Works)

Outside Agencies

Scott Peck	Hamilton Region Conservation Authority
Marion Plaunt	Niagara Escarpment Commission

In addition to the above personnel, the following consultants were involved in the study:

- Philips Planning & Engineering Ltd - Road Design
- Dougan and Associates - Natural Features and Visual Assessment
- Unterman, McPhail, Cuming Associates - Heritage Assessment
- S.S. Wilson and Associates - Noise Study
- Peto MacCallum Ltd. - Geotechnical Considerations
- L. Graff & Associates - Public Workshop Facilitation

2.4 STAKEHOLDER CONSULTATION

To be fair and meaningful, consultation must begin early in the planning process so that stakeholder concerns (i.e., government agencies, special interest groups and the public directly impacted by the project) can be identified and addressed before irreversible decisions and commitments are made on the chosen approach or specific proposals. To achieve this, the planning process must be designed around the involvement and contributions of stakeholders. The benefits of this approach are:

- improves the understanding of environmental concerns before the preferred plans are selected;
- focuses the proponent's planning on matters of concern;
- encourages the identification and resolution of issues before an ESR is written and placed on public review; and
- promotes mutually acceptable, environmentally sound solutions.

2.4.1 Consultation Program

The Project Team used the following three point approach to develop the James Mountain Road consultation program:

1. Goal Setting

The goal of the consultation program is to have stakeholders help the Project Team define the problems associated with James Mountain Road, generate and evaluate alternative solutions, review the alternative designs and select a recommended improvement plan.

2. Involving Stakeholders

The Project Team solicited the involvement of individuals, interest groups and government agencies by newspaper advertisements, project newsletters, and open invitation letters. Examples of each form of communication and the distribution catchment areas are in Appendix A, B and C.

3. Consultation Plan

Key components of the consultation plan include: providing information, understanding stakeholder concerns, ideas, and values, discussing issues, building consensus and ensuring proper follow-up action. Techniques used to implement the key components include:

- two public meetings held during the problem identification, and alternative solutions phases;
- an information centre and public meeting held during the alternative design phase;
- special interest meetings with individuals/small groups held throughout the study; and
- other forms of communication such as newsletters, information packages, comment/questionnaire sheets and telephone/fax access.

Each consultation technique involved:

Public Meetings

Public Meetings involved the Project Team making a formal presentation to the public and allowing the public an opportunity to ask questions, clarify comments, express concerns, communicate ideas and values, and discuss issues. Each Public Meeting followed a preset agenda which was facilitated by a neutral party.

Information Centre

The public information centre is a relatively informal event designed to allow people to drop in, obtain information and ask questions at their convenience.

Special Interest Meetings

Planned and unplanned meetings occurred randomly throughout project planning. Individuals or small groups of people who could not attend either the information centre or the public meetings requested separate meetings with Project Team representatives in order to be briefed of new information and articulate concerns/issues.

2.4.2 Stakeholder Involvement

The following stakeholders were contacted for involvement in the planning and design process.

Public

Members of the public who own a property or reside within the area shown in Appendix A are directly impacted by the study. These individuals were contacted, and informed of the progress of the study, through project newsletters. When the scope of the study expanded to include the study extension, the newsletters were circulated to a broader area (see Appendix B).

Interested individuals who contacted the Region either by telephone, mail or fax were also added to the mailing list.

Over two hundred individuals attended the public meetings and the information centre, or called/met with Project Team representatives.

Interest Groups

- Bruce Trail Association
- Central Area Planning and Implementation Committee (CAPIC)
- Local Architectural Conservation Advisory Committee (LACAC)
- Environmentally Significant Areas Investigation Group (ESAIG)
- Downtown Hamilton Business Improvement Association
- Durand Neighbourhood Association and Implementation Committee
- Hamilton Automobile Association (Club)
- Hamilton and District Chamber of Commerce
- Hamilton Naturalist Club
- Hamilton Physicians and Surgeons (25 Charlton St.)
- Hillfield Strathallan College
- Mohawk College
- Regional Environment Advisory Committee
- Social Planning and Research Council of Hamilton and District
- St. Joseph's Hospital
- The Scout House (the Boy Scout's of Canada)
- The Hamilton Heritage Roads Committee

Government & Utilities

- Bell Canada
- Hamilton Board of Education
- Hamilton Region Conservation Authority
- Ministry of Culture, Tourism and Recreation
- Ministry of Environment and Energy
- Ministry of Health
- Ministry of Natural Resources
- Ministry of Transportation
- Niagara Escarpment Commission
- Union Gas Limited
- The Hamilton Hydro Electric Commission
- Roger's Cable Television

The specific concerns and issues stakeholders raised at each stage of the project and action taken

by the Project Team are highlighted in the following chapters.

CHAPTER 3

Environmental Conditions

3.0 ENVIRONMENTAL CONDITIONS

This chapter describes the natural, socio-economic, cultural and transportation conditions that exist, or are expected to exist, in the James Mountain Road study area. Key aspects of the environment that are considered to be important for decision-making purposes are highlighted at the end of each section.

Technical studies were conducted by Regional and local staff and qualified consultants in order to ensure a complete and accurate description of the study area. Reports generated by the various studies are listed in Section 1.6. Consultants involved in the study are listed in Section 2.3.

3.1 STUDY AREA FEATURES

James Mountain Road is an access route linking arterials above and below the escarpment, namely, West 5th Street and James Street, respectively (see Figure 3). The study area includes the road right-of-way and the features adjacent to the right-of-way, which could be affected by the project (see Figure 5).

The following sections describe the aforementioned features in detail.

3.2 TRANSPORTATION

James Mountain Road is one of six roads crossing the Niagara Escarpment in the central area of the City of Hamilton (see Figure 2). The escarpment is a natural barrier to travel between the upper and lower portions of the City. A moratorium on new and unapproved escarpment crossings in the Region was passed by Regional Council in the late 1970's and is still in effect. Existing crossings are, therefore, regarded as critical links in the regional transportation network. The other central Hamilton crossings are: Beckett's Drive/Queen Street Hill, the Claremont Access, the Jolley Cut, the Sherman Cut/Access and the Kenilworth Access.

3.2.1 Roadway Characteristics

James Mountain Road is an undivided, two lane arterial roadway connecting West 5th Street, on the top of the escarpment, to James Street and St. Joseph's Drive, at the bottom of the escarpment. Gateview Drive, Inglewood Drive and Claremont Drive all intersect James Mountain Road within the study area (see Figure 5).

Speed Limit

The speed limit is not posted and therefore, defaults to the statutory limit of 50 km/h.

Alignment

Alignment refers to the horizontal and vertical path the roadway follows.

The roadway maintains a number of gradual curves and two relatively sharp curves. The average grade of the road from Gateview Drive to Freeman Place is 8.2%. Maximum grades of almost 11% occur in this section.

Cross Section

The roadway cross section is comprised of the linear/longitudinal elements of the roadway and their respective widths. Typical elements of the cross section include: travel lanes, drainage features (i.e., ditches, gutters, catch basins, etc.), shoulders, guide rails, sidewalks, and boulevards. In general, the width of the existing roadway cross section varies from 7.5 metres to 12.5 metres (see Figure 6).

Lane widths vary along the roadway cross section from 4.1 metres in the more developed areas at the top and bottom of the escarpment to 2.7 metres in the natural area, between Inglewood Drive and the Claremont Bridge (see Figure 6 and Photograph 1). In general, however, 80% of the lane widths along the natural area are 3.4 metres wide or greater.

Drainage along the roadway is conveyed by a 0.5 metre asphalt swale on the south side and a 0.5 metre asphalt curb-like structure on the north.

Shoulder and/or boulevards are present, in varying widths, at the top and bottom of the roadway (see Photographs 4 and 5). The natural area has no shoulder area for disabled vehicles to pull on to in emergency situations or to provide support for the pavement (see Photograph 3).

A yellow steel beam guide rail has been erected on the north side of the road to prevent errant vehicles from plunging over the steep escarpment slope. The guide rail is currently in disrepair and is leaning downhill in several locations (Photograph 2). The condition of the guide rail is such that it is not structurally sound and will not perform as intended.

Roadway Condition

The pavement condition through the natural portion of the study area is deteriorating. Cracks have developed on the north side of the road due to slope instability and on the south side of the road due to poor drainage (Photograph 6). Edge cracking is exacerbated by insufficient lateral support and narrow lanes forcing vehicles to travel close to the edge of the pavement.

The Region inventories and rates the quality of the road and specific elements of the road every year. The ratings are summarized in the Annual Road Needs Update and the Infrastructure Management System. According to these inventories James Mountain Road is classified as 'NOW' deficient in terms of surface condition, structural adequacy (i.e., the road base) and shoulder type and width. The recommended course of action identified in these documents is road reconstruction.

Road Users

The primary road users are motorists driving

passenger cars. Municipal buses are also regular road users. Trucks over 4 tonnes registered gross weight are prohibited from using James Mountain Road except to make local deliveries, if it is the shortest distance, off of the truck route system, to the destination.

The Regional Bicycle Plan does not identify James Mountain Road as a bicycle route, although cyclists are not prohibited from using this road.

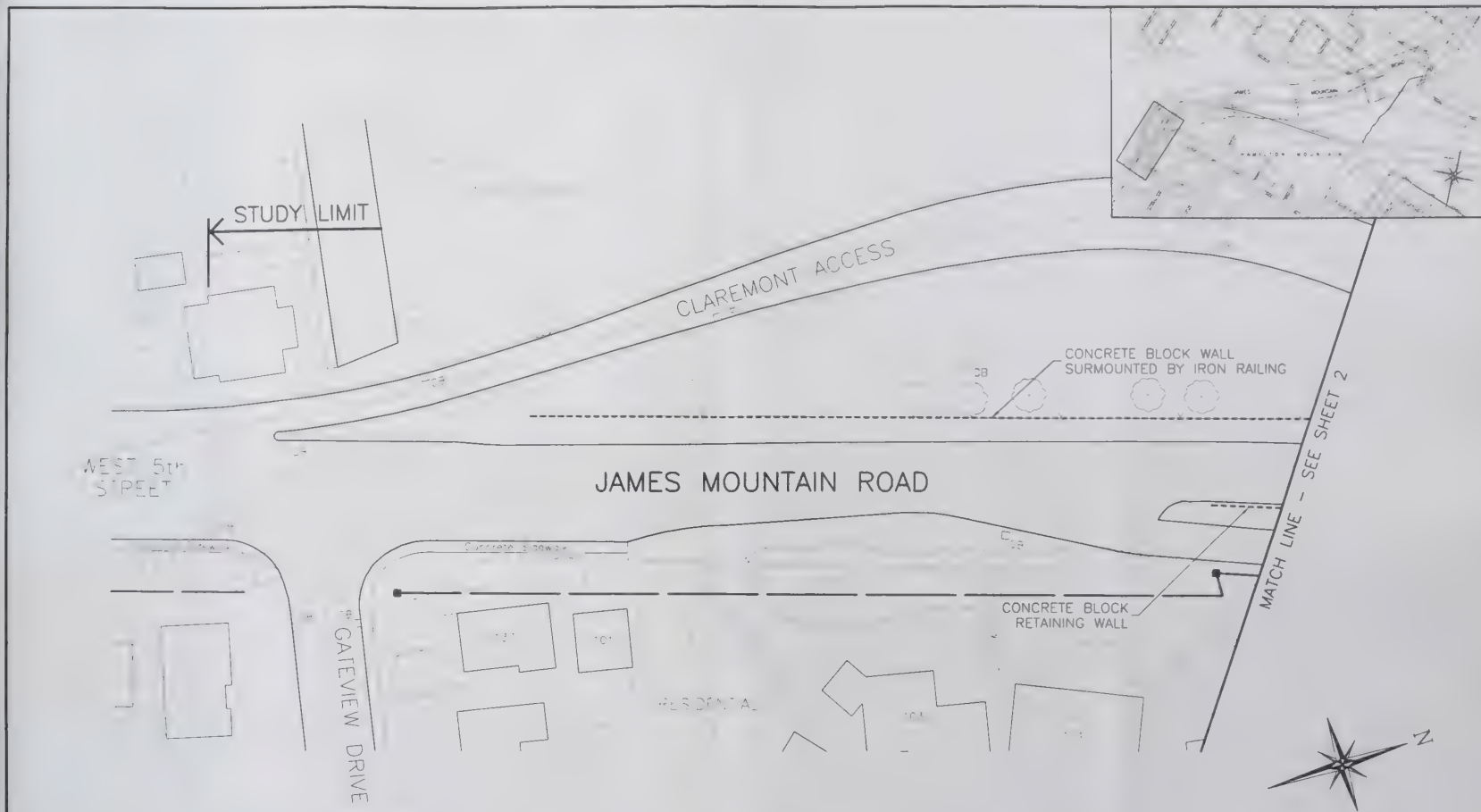
Pedestrians are not prohibited from using James Mountain Road. Space for pedestrians, either a sidewalk or a boulevard, have been provided along the road at the top and bottom of the escarpment, but not through the natural area. Pedestrians can cross the escarpment via the asphalt path and steel stairs connecting Freeman Place to Southam Park on Upper James Street (Photograph 7). The stairs are owned, operated and maintained by the City of Hamilton.

Pedestrians can also use an unimproved trail connecting John Street to Southam Park.

Utilities and Emergency Services

Overhead street lights are located on the south side of James Mountain Road. Emergency phones are provided on the south/east and north/west sides of the road at the top and bottom of the escarpment, respectively.

In the natural area, James Mountain Road has lanes as narrow as 2.7 metres and lacks a shoulder to support the pavement and the road base. The road lacks an adequate roadside area to provide refuge for disabled vehicles. The guide rail is in disrepair and provides little to no protection from the escarpment slope. The pavement and road base require immediate reconstruction. The typical road users are passenger cars, buses and less frequently pedestrians.



LEGEND

284

- TREE & No.
- FENCE
- BUSH LINE



- ASPHALT



- WALL/RETAINING WALL



- CATCHBASIN



- CULTURALLY SIGNIFICANT BUILDING



- FIRE HYDRANT



- HYDRO POLE



- BELL POLE



- LIGHT STANDARD



- IRON BAR



- RIGHT-OF-WAY



The Regional
Municipality of
Hamilton-Wentworth

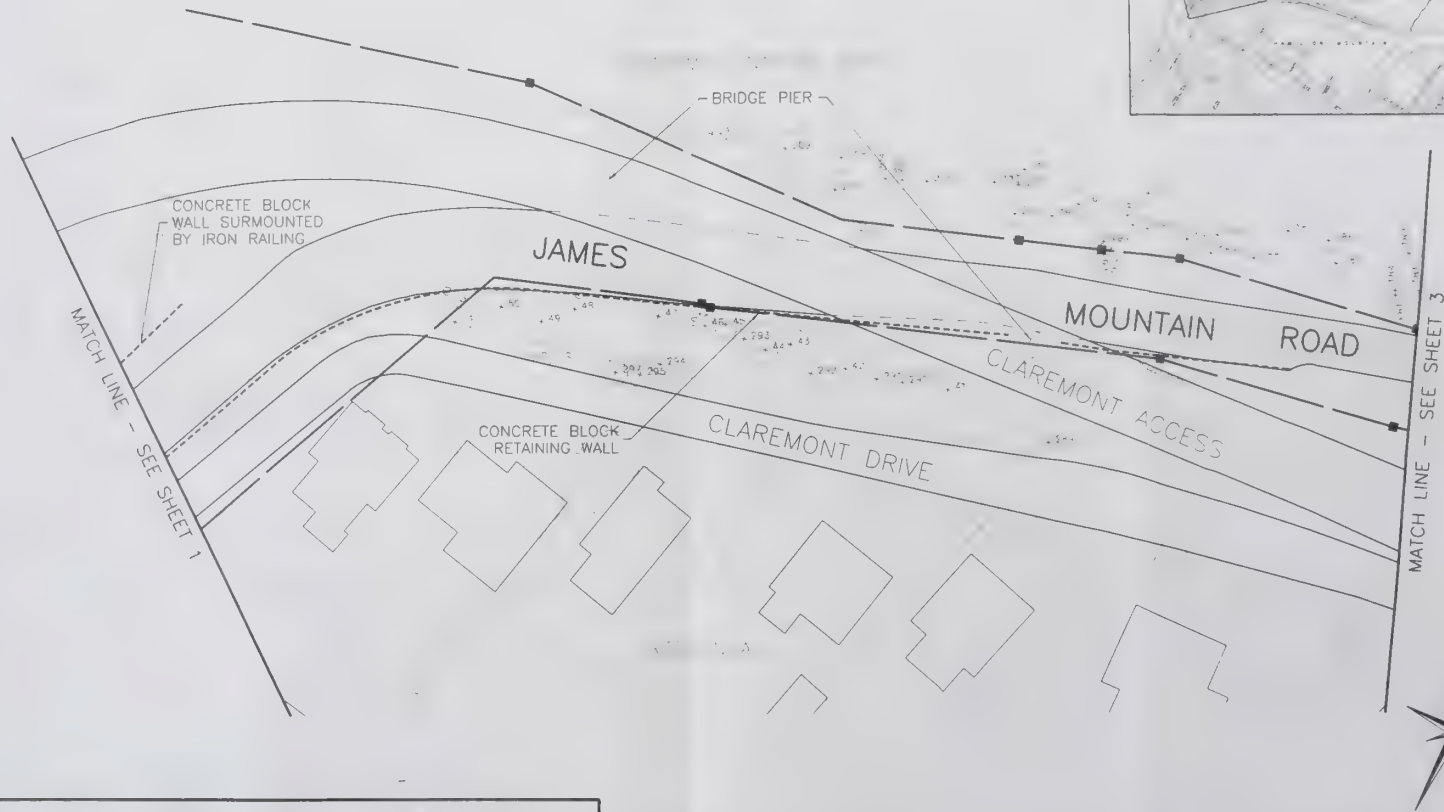
FIGURE 5
JAMES MOUNTAIN ROAD
EXISTING CONDITIONS



Phillips
Planning
Engineering
Limited

1 : 500

SHEET 1 OF 6



LEGEND

- | | | |
|--------------|-----------------------------------|------------------|
| - TREE & No. | - ASPHALT | - FIRE HYDRANT |
| - FENCE | - WALL/RETAINING WALL | - HYDRO POLE |
| - BUSH LINE | - CATCHBASIN | - BELL P.O.E |
| | - CULTURALLY SIGNIFICANT BUILDING | - LIGHT STANDARD |
| | - IRON BAR | - RIGHT-OF-WAY |



The Regional
Municipality of
Hamilton-Wentworth

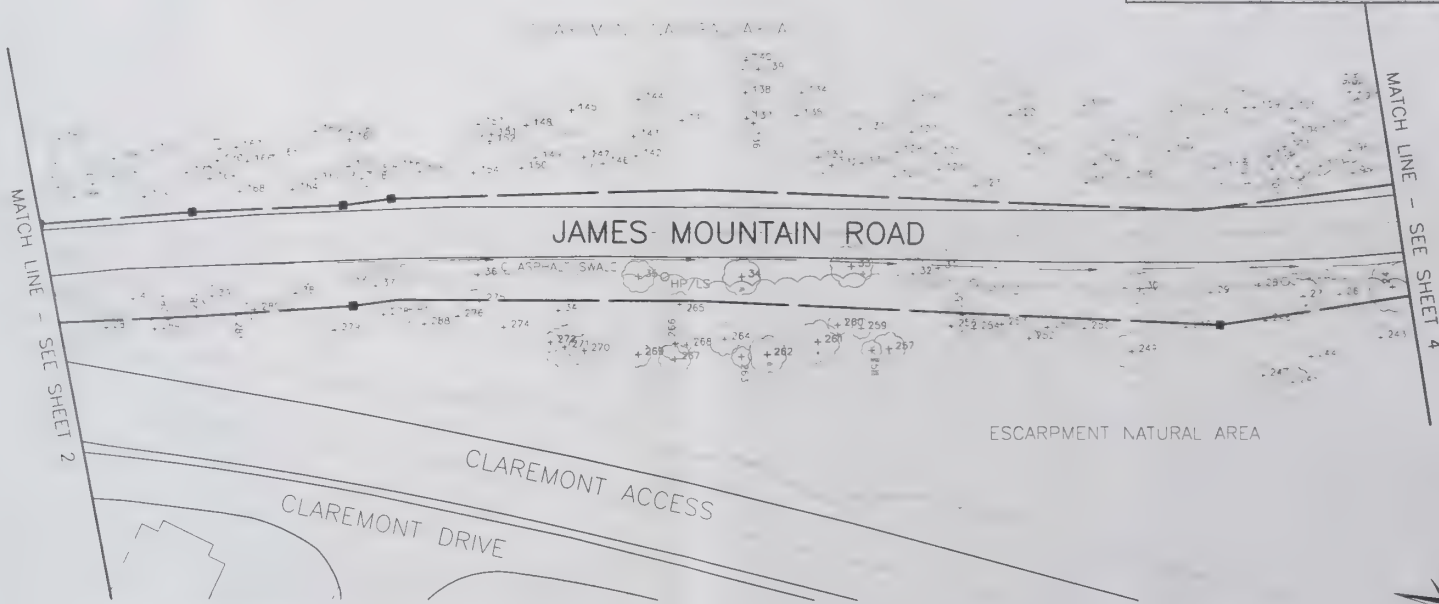
FIGURE 5
JAMES MOUNTAIN ROAD
EXISTING CONDITIONS



Phillips
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Engineering
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SHEET 2 OF 6



LEGEND

- | | | |
|-------------|-----------------------------------|------------------|
| - TREE & No | - ASPHALT | - FIRE HYDRANT |
| - FENCE | - WALL/RETAINING WALL | - HYDRO POLE |
| - BUSH LINE | - CATCHBASIN | - BELL POLE |
| | - CULTURALLY SIGNIFICANT BUILDING | - LIGHT STANDARD |
| | | - IRON BAR |
| | | - RIGHT-OF-WAY |

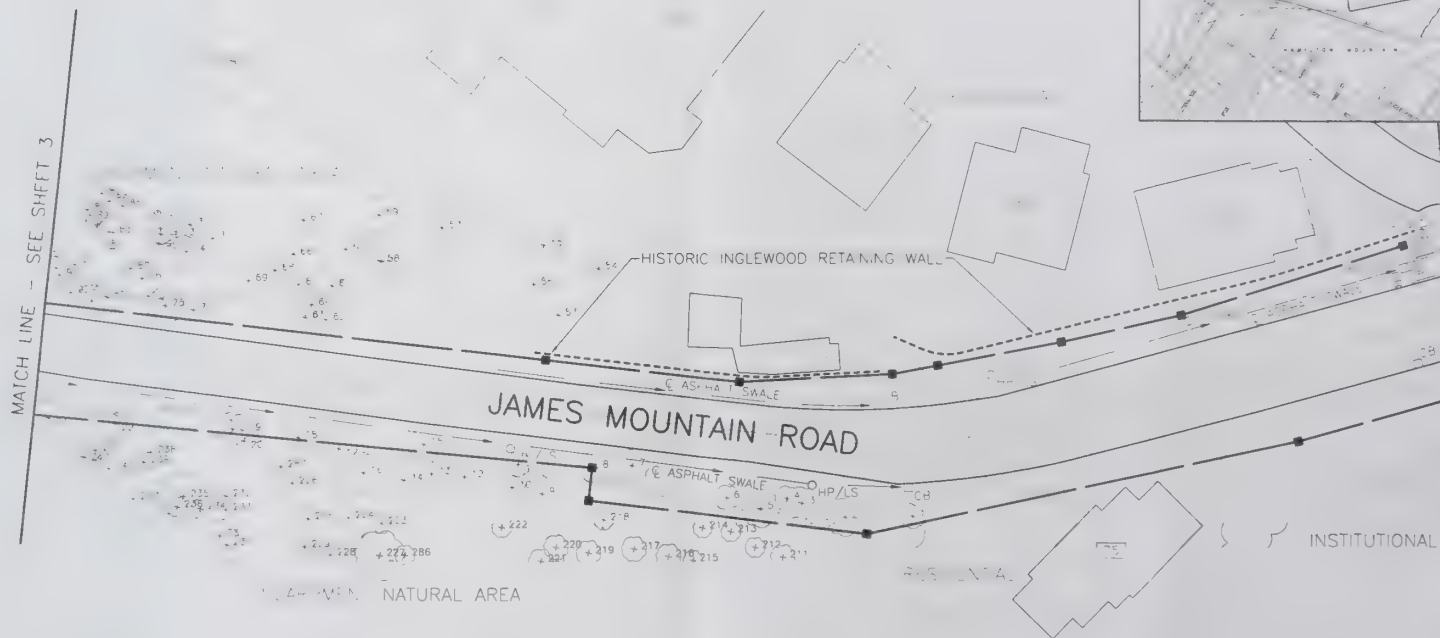


FIGURE 5
JAMES MOUNTAIN ROAD
EXISTING CONDITIONS



MATCH LINE - SEE SHEET 3

MATCH LINE - SEE SHEET 5

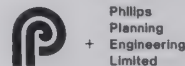


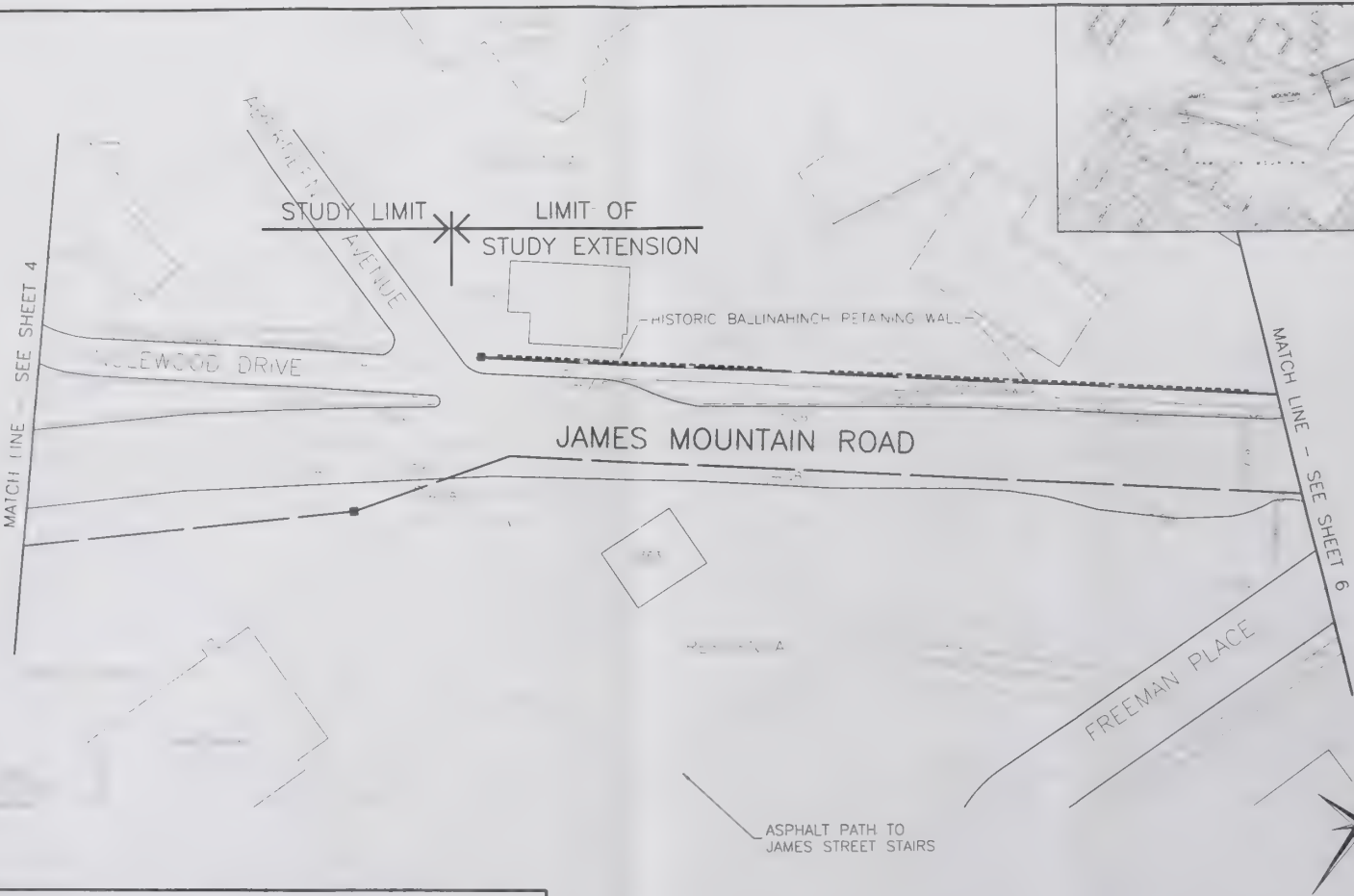
LEGEND

- | | | |
|--------------|-----------------------------------|-----------------------|
| - TREE & No. | - ASPHALT | ◊ FH - FIRE HYDRANT |
| - FENCE | - WALL/RETAINING WALL | ○ HP - HYDRO POLE |
| - BUSH LINE | - CATCHBASIN | △ BELL POLE |
| | - CULTURALLY SIGNIFICANT BUILDING | ○ LC - LIGHT STANDARD |
| | | ■ IRON BAR |
| | | - RIGHT-OF-WAY |



FIGURE 5
JAMES MOUNTAIN ROAD
EXISTING CONDITIONS





LEGEND	
- TREE & No.	- ASPHALT
- FENCE	- WALL/RETAINING WALL
- BUSH LINE	- CATCHBASIN
	- CULTURALLY SIGNIFICANT BUILDING
	- RIGHT OF-WAY
	- FIRE HYDRANT
	- HYDRO POLE
	- BELL POLE
	- LIGHT STANDARD
	- IRON BAR



FIGURE 5
JAMES MOUNTAIN ROAD
EXISTING CONDITIONS

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Planning
Engineering
Limited

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SHEET 5 OF 6

MATCH LINE - SEE SHEET 5

JAMES PLACE

MARKLAND STREET

LIMIT OF
STUDY EXTENSION

JAMES STREET SOUTH

Concrete Sidewalk

PARKING

ST. JOSEPH'S
DRIVE



LEGEND

- | | | |
|-------------|-----------------------------------|-----------------------|
| - TREE & No | - ASPHALT | ○ FH - FIRE HYDRANT |
| - FENCE | - WALL/RETAINING WALL | ○ HP - HYDRO POLE |
| - BUSH LINE | - CATCHBASIN | ○ BP - BELL POLE |
| | - CULTURALLY SIGNIFICANT BUILDING | ○ LS - LIGHT STANDARD |
| | | ■ IB - IRON BAR |
| | | - RIGHT-OF-WAY |



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Hamilton-Wentworth

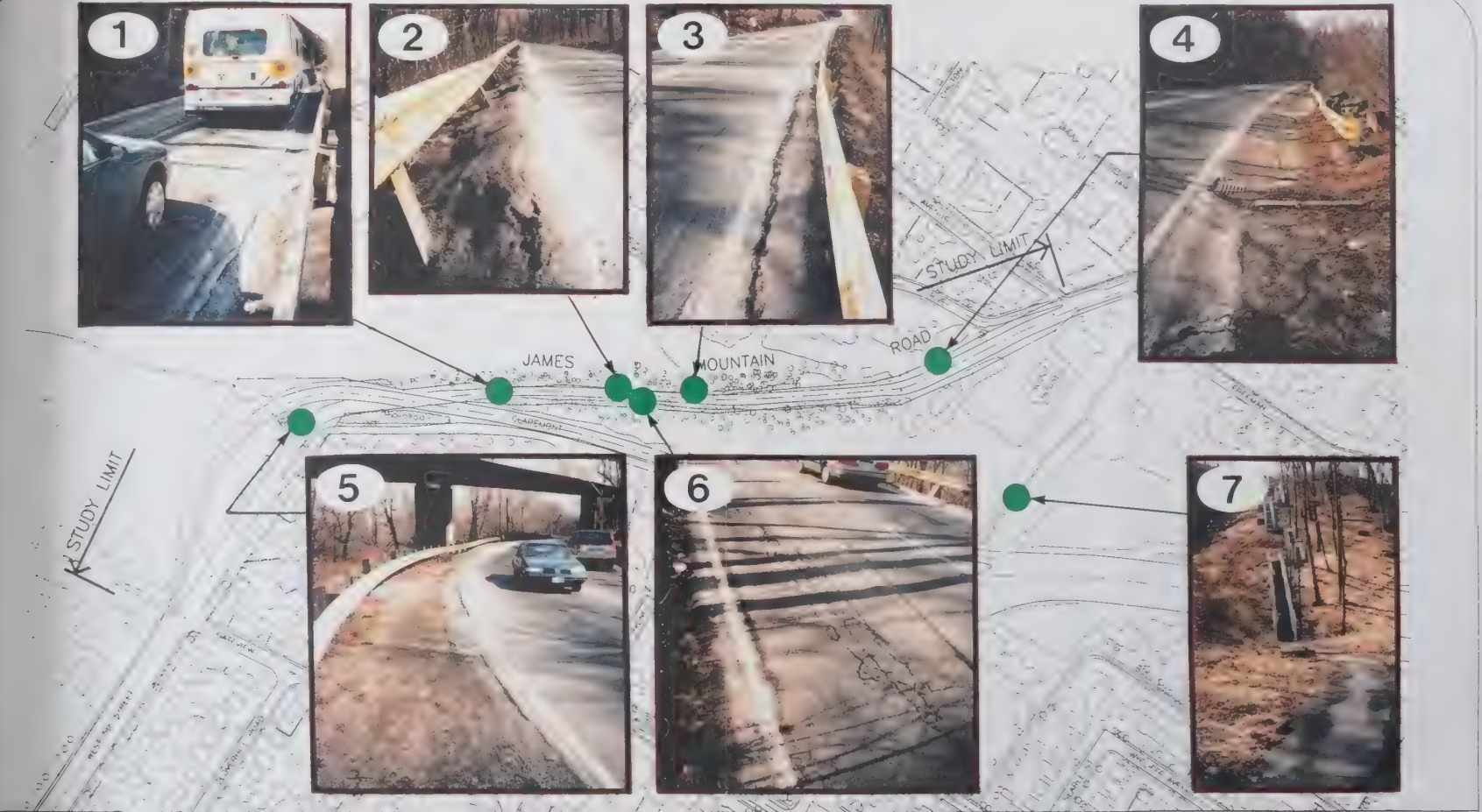
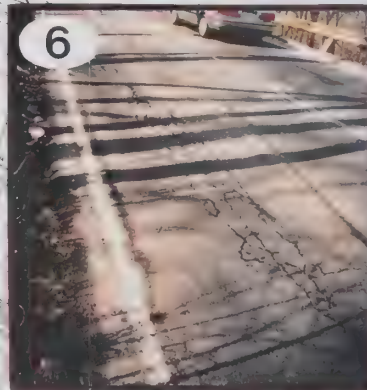
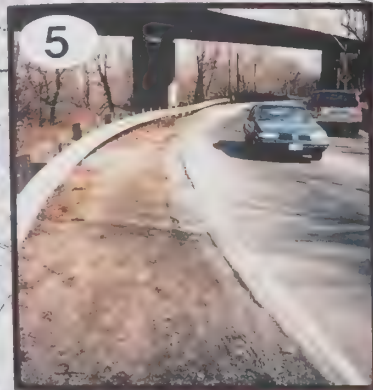
FIGURE 5 JAMES MOUNTAIN ROAD EXISTING CONDITIONS



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Planning
Engineering
Limited

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SHEET 6 OF 6



3.2.2 Traffic Operation

For the majority of the day, traffic is accommodated in one upbound lane and one downbound lane. However, during the afternoon peak (4:20 p.m. to 6:10 p.m.) traffic demand is such that, two upbound lanes are provided. Downbound traffic is prohibited during the afternoon peak period by a traffic control gate and an overhead lane control signal at the top and bottom of the escarpment, respectively.

An afternoon peak period study conducted in 1987 (i.e., when James Mountain Road operates as two upbound lanes) reveals that approximately 25% of the vehicles use the left/reversed lane and 75% use the right lane.

The Average Annual Daily Traffic (AADT) for James Mountain Road currently is 19,100 vehicles per day. Most of this traffic (99.4 %) is made up of passenger cars and light trucks. The remaining 0.6% is comprised of medium size trucks which includes buses. Heavy truck traffic (over four tonnes registered gross weight) is prohibited except for local deliveries.

By the year 2021, the AADT is expected to increase by 13% to 21,600 vehicles per day. Medium size truck traffic is expected to increase to 1.0% of the total volume. This increase can generally be attributed to the higher volume of bus service called for in the Regional Transportation Review (see Section 3.2.4).

Bus traffic is expected to increase over the next twenty years from 3 buses each way in the morning peak hour (the AM peak), 3 buses in the afternoon peak hour (the PM peak - one way), and 2 buses per hour each way during the mid-day, to 20 buses per hour in both peak hours and 10 buses per hour during the mid-day. Hamilton Street Railway (HSR) buses are the maximum width permitted under the Highway Traffic Act of Ontario, i.e., 2.6 metres excluding the rear vision mirrors which extend beyond the side of the bus. With the mirrors included, the bus width is 2.9 metres.

Parking is not permitted on either side of the road.

Anecdotal evidence related to vehicle breakdowns suggest that incidents occur about 3 to 4 times per week. Breakdowns are not recorded by any agency unless they cause a collision in which case the Hamilton-Wentworth Regional Police document the accident. The Communications Section of the Regional Police, who receive the telephone calls from the emergency phones located on James Mountain Road, 911, and other emergency calls, estimate the incident rate on James Mountain Road as 3 or 4 incidents per week.

The effects that a vehicle breakdown has on James Mountain Road are a temporary decrease in traffic capacity, an increase in collision potential, and the introduction of a potential pedestrian/vehicle conflict as the stranded motorist walks to the emergency phones. The quantitative effect of a breakdown on capacity is unique to the situation and depends on the type and size of vehicle that has become disabled, the lane it is occupying, the opposing flow rate, etc. Regardless, in all but the most lightly travelled times of the day a vehicle breakdown causes some loss in roadway capacity (i.e., the roadway allows fewer vehicles to pass through which usually results in motorist delays and frustration). Moreover, a stranded vehicle is a hazard in the roadway and increases the collision potential. Typically, a disabled vehicle may cause rear-end, head-on, or side swipe collisions. The narrow roadway and the availability of emergency phones at the top and bottom of the escarpment generally cause stranded motorists to leave their vehicles and walk along the road seeking assistance.

Pedestrian and cyclist volumes recorded during the busiest 7 hours of the day in May 1995 indicate that very few pedestrians or cyclists use James Mountain Road (approximately 7 and 10 during the daytime, respectively). The stairs to the east of James Mountain Road are used by approximately 110 pedestrians and 8 cyclists daily.

Typically, in urban areas, the capacity of a roadway is defined by the capacity of the

intersections. This is true of the downbound lane of James Mountain Road where the capacity of the road is dependent on the motorist's ability to turn left onto Markland Street and turn right on to St. Joseph's Drive. In the upbound direction the side streets that intersect the roadway are generally lightly travelled and do not define the capacity. Instead, the capacity of the road is dictated by the grade of the road. Therefore, the capacity of the roadway will be discussed in terms of the roadway itself and the ability of the lanes to carry traffic rather than the ability of the intersections to control and alternate right-of-way.

The capacity of James Mountain Road is determined using standard methods and techniques based on observations and measurements of traffic flow under varying roadway conditions. Under the existing conditions, i.e., narrow lanes, little or no shoulders and a steep grade, the capacity of James Mountain Road is approximately 1660 vehicles per hour for both directions combined. The current and expected (year 2021) peak hour traffic volumes are 1460 and 1450 vehicles per hour, respectively. Therefore, additional travel lanes are not required.

There is no need for additional lanes of through traffic on James Mountain Road. Anecdotal evidence from the Hamilton-Wentworth Regional Police suggests that vehicle related incidents occur on this road 3 to 4 times per week. These incidents result in disruptions in services, increased collision potential and the introduction of a pedestrian (i.e., a stranded motorist walking to the emergency phone) in the traffic stream.

The number of buses using this road will increase. The overall width of the Hamilton Street Railway buses are typically 2.9 metres.

A relatively small number of pedestrians and cyclists use this road daily.

3.2.3 Roadway Safety Record

A roadway's safety/accident record is not only an indicator of the level of safety on the roadway, it is also a reflection of the adequacy of the roadway design. Roadway safety is influenced by three elements: the driver, the vehicle and the roadway. Accidents are essentially random events. Therefore, a persistent occurrence of collisions at any location is usually an indication of a road failure (i.e., inadequate maintenance, traffic control, or roadway design).

Accident statistics provide insight into the general state of the roadway's safety and can assist in the development of corrective measures. In general, the three statistics that the Region uses to identify problems are: accident frequency, accident severity and accident rates.

In most cases the relative safety of a roadway is determined through a comparison of it's accident record with accident statistics of other similar roads. James Mountain Road is a unique roadway based on it's physical features and position within the street hierarchy. The nature of the road makes it difficult to draw conclusions with respect to safety from comparisons with other Regional roadways. However, there are certain collision statistics that can yield meaningful results from a comparison with other Regional roads. When comparisons are carried out, James Mountain Road accident information is compared to accident statistics from the Region of Hamilton-Wentworth's Annual Collision Reports.

All collisions reported in subsequent sections include only collisions that were reported to the Hamilton- Wentworth Regional Police. They do not include minor accidents that were not reported to the police and accidents reported to the Ontario Provincial Police (i.e., accidents that occur on the Provincial highway system).

It is common practice to examine collision information from the most recent 5 years. Examining data for less than 5 years is subject to error from random variations in collision

occurrence from year to year; examining data for more than 5 years is subject to error from unaccounted changes in roadway or traffic conditions. The analysis of the James Mountain Road collision record uses data from 1990 to 1994, inclusive.

The accident analysis includes accidents from Inglewood Drive to St. Joseph's Drive because this section is part of the escarpment crossing roadway and it generally yields more meaningful results.

Accident Frequency

Accident frequencies are used to help determine the causes of accidents and whether preventive measures may prove useful. Actions taken to reduce or prevent accidents from occurring will hereinafter be referred to as collision countermeasures.

In the case of James Mountain Road from Gateview Drive to St. Joseph's Drive, there has been 64 accidents from 1990 to 1994, inclusive (12.8 accidents per year). This frequency is high enough to suggest that, subject to identifying a trend in the collisions that are occurring, potential preventative measures would be beneficial.

In order to identify trends in the collisions, and subsequently the causative factors, select roadway, collision and environmental conditions are examined. The typical conditions that are examined are road surface, light, accident location, type of road user and type of impact. The analysis indicates the following about James Mountain Road:

- collisions on wet road surfaces occur more frequently than on other roads;
- head-on, side swipe and single motor vehicle collisions occur more frequently than on other roads;
- collisions at night occur more frequently than on other roads;

- cyclists collisions occur less frequently than on other roads in the Region; and
- pedestrian collisions occur with the same frequency (statistically) as for other roads in the Region.

Cyclist collisions are likely under-represented on James Mountain Road because of the low volume of cyclists who use this road. The pedestrian collision frequency, although the same as for other roads in the Region warrants attention because of the typically lower volume of pedestrians on James Mountain Road. A further investigation into this concern reveals that the frequency is based on a single pedestrian involved collision that occurred in the study extension. Therefore, the pedestrian collision frequency provides no cause for concern.

A more detailed analysis of the types of collisions indicates that 4 types of collisions make up 78.7% of the accidents on James Mountain Road. These accidents, their relative distribution and the average distribution for all collisions occurring from 1990 to 1994 are shown in Table 1.

The conventional wisdom with respect to accident analysis and prevention indicates that the factors shown in Table 2 are potential concerns and/or causative factors.

Identifying the actual locations of the collisions is difficult because measurements by the investigating officer are usually estimates. However, a review of other information on the accident reports (i.e., roadway descriptions and sketches) reveals that the majority of the collisions are occurring at the top and the bottom of the escarpment. There are approximately 2 collisions per year on the relatively straight section of road from the Claremont overpass to 75 James Mountain Road.

Accident Severity

Collision countermeasures can be implemented not only to reduce the number of collisions, but also to reduce the severity of accidents. Therefore, it is

TABLE 1: ACCIDENT TYPES ON JAMES MOUNTAIN ROAD		
Accident Type	James Mountain Road	1990-1994 Average
	(% of total collisions)	
Head-on	12.5	2.1
Side swipe	19.0	7.8
Rear ender	15.7	23.6
Single Vehicle	31.5	20.9
Total	78.7	54.4

TABLE 2: TYPICAL ACCIDENT CAUSES	
Accident Type	Typical Cause
Wet road	poor drainage, worn pavement
Night collision	poor lighting
Head-on/Side swipe	narrow lanes, curving alignment, inadequate traffic control
Rear ender	slippery pavement, steep grades, poor visibility, curving alignment, speeding
Single Vehicle	slippery/poor pavement, speeding, inadequate traffic control or road design, curving alignment

important that accident severity be analysed.

There have been no fatal accidents on James Mountain Road from 1990 to 1994, inclusive. Moreover, the frequency of injury accidents is significantly lower than the frequency of injury accidents for all roads in the Region of Hamilton-Wentworth. As a result, severe collisions are not a problem on James Mountain Road.

Accident Rates

The most accurate method of comparing collision statistics is through accident rates. Accidents are essentially random occurrences, however, the probability of the occurrence of a collision increases with exposure, i.e., the longer the road or the more vehicles using the road the greater the exposure. Exposure based accident rates account for the differences between roadway lengths and volumes and allow a true comparison of accident statistics.

In a very broad sense the nature of the collisions is different at intersections and on roadway segments. Therefore, accident rates are generally calculated separately for intersections and roadway sections. In the Region of Hamilton-Wentworth, accident rates are regularly calculated for signalized intersections and for roadway segments with the unsignalized intersection collisions included. Since there are no signalized intersections within the study area all of the collisions are included in the road segment calculation. The accident rate for James Mountain Road from Gateview Drive to St. Joseph's Drive inclusive is 3.41 accidents per million vehicle kilometres. That is to say, if one million vehicles travelled one kilometre on James Mountain Road there would be 3.41 accidents.

According to the 1994 Hamilton-Wentworth Collision Report the average collision rate for arterial roadway segments in the City of Hamilton between 1990 and 1994, inclusive is 2.14 collisions per million vehicle kilometres. Clearly, James Mountain Road has a collision rate above the City-wide average and is therefore operating unsatisfactorily.

The collision frequency and rate indicate that this road is substantively unsafe. There is an abnormally high occurrence of head-on, side swipe, rear end and single motor vehicle collision. Furthermore, the majority of the collisions occur on the curve at the brow of the Escarpment.

3.2.4 Regional Transportation Review

The Region is currently nearing the completion of a Regional Transportation Review (RTR) which will outline the direction and plan for the regional transportation system for the next 25 years. The RTR is an extension of Vision 2020, a community based statement of goals and objectives that requires all future decision-making in the Region to be guided by the principles of sustainable development. The RTR details the actions/changes necessary to create a sustainable transportation system. Specifically, the shift in focus of transportation and land use planning is on the basis of this order of transportation priorities: walking, needs of people with disabilities, bicycling, public transit, goods movement, and private motor vehicle.

The following information is contained in the Draft Final Report:

Transit

James Mountain Road is to be developed as a 'major transit corridor connecting the west mountain area and Mohawk College with the downtown core and the Hamilton GO Station.' The most appropriate option to accommodate two-way bus traffic at all times of the day, is to remove and replace the one-way upbound operation in the afternoon peak with one lane upbound for mixed traffic and one lane downbound for transit only.

Vehicles

James Mountain Road is not specifically mentioned with respect to vehicular traffic. However, the

recommended plan is to use the Claremont Access as the primary vehicular escarpment crossing. If the transit initiatives are implemented, traffic volumes are expected to stay roughly the same as current volumes (i.e., approximately 21,600 vehicles per day).

Pedestrians

There is no specific mention of James Mountain Road with respect to pedestrian amenities.

Bicycles

James Mountain Road is not specifically mentioned in regard to bicycle traffic. It is not designated as a bicycle route according to the Regional Bicycle Network Plan. That plan recommends the Jolley Cut as the central escarpment bicycle crossing.

Trucks

James Mountain Road is not a designated truck route and there are no plans to designate it as one due to its steep grade. Therefore, trucks are only legally permitted to use the road to make local deliveries.

The Regional Transportation Review proposes the continued (and increased) use of this road by municipal buses.

James Mountain Road is not identified as a bicycle route by the RTR or the Bicycle Network Plan.

3.3 NATURAL ENVIRONMENT

James Mountain Road winds through one of Ontario's most significant natural resources, the Niagara Escarpment. The following section describes the biotic and abiotic features that compose this unique land form.

3.3.1 Environmentally Sensitive Areas

The study area is located within part of the Hamilton-Niagara Escarpment Environmentally Sensitive Area (ESA #22) as designated by the Hamilton-Wentworth Regional Official Plan and HAMI-65 E.S.A. as designated in the Hamilton-Wentworth Natural Areas Inventory.

The Hamilton-Wentworth Natural Areas Inventory denotes the Escarpment through Hamilton as the Hamilton-Escarpment Significant Natural Area on the basis of its important ecological role, the distinctive Niagara Escarpment landform, and the presence of habitat for significant species.

The potential for impact on the ESA is a primary focus for assessment. This includes consideration of the possible effects that changes to James Mountain Road could have on sensitive features of the ESA, on its aesthetics, and on functions of the greenspace corridor.

3.3.2 Geology

The study area is located along a geologic discontinuity known as the Niagara Escarpment. Bedrock in this area was deposited during Palaeozoic geologic time, is relatively flat lying, and dips slightly to the south. The rock consists of relatively hard dolomite and limestone underlain by softer shale and sandstone. Material covering the bedrock generally consists of deposits of till and/or talus (i.e., weathered rock, soil and debris that has fallen from the slope above).

The escarpment is the result of differential rates of erosion. The lower, softer materials erode more quickly than the upper harder materials. The erosion is a natural and continuing geologic process leading to retrogression of the escarpment face. The process involves weathering of rock close to or at the ground surface, causing reduction in strength, to the point that the weathering product

falls, or moves down slope due to gravity.

The erosion process leads to formation of talus, which varies considerably in thickness and composition, ranging from numerous angular boulders to clay size material. The talus is generally loose and is underlain by a sloping bedrock surface. Consequently, the deposit is only marginally stable. Active movements may be initiated by an increase in surface water runoff, destruction of the topsoil and root mat layer, minor cuts into the talus or by placing fill on the surface.

Shallow failure of the escarpment slope is occurring on the downside (north) slope adjacent to the roadway. This is especially evident at the oversteepened section approximately half-way up James Mountain Road. The movement of the slope is manifest in longitudinal cracking of the asphalt roadway in the upbound lane and heaving and tilting of the guide rail on the downhill side of the road.

The talus material supporting the road on the north (downhill) slope is marginally stable. The slope currently exhibits signs of active shallow movements on the north slope.

3.3.3 Topography

The Niagara Escarpment is a major topographic feature in the Hamilton area. At James Mountain Road the ground surface elevation drops from approximately 194 metres at Gateview Drive to 119 metres at St. Joseph's, a difference of 75 metres.

The inclination of the slope north (downhill) of the road typically ranges between 30° to 35° to the horizontal. This slope tends to be flatter near the backyards on Inglewood Drive and increase near the road to about 45°. Uphill (south) of the road, the ground surface is generally inclined at 40° to 45°. Portions of the slope near the top of the

escarpment are cut into the rock and are near vertical.

An abrupt steepening of the slope occurs adjacent to the north lane along the full length of the roadway. It is evident that placement of fill has resulted in oversteepening of the downhill slope during construction of the roadway. The increase in slope is most pronounced approximately halfway up James Mountain Road.

3.3.4 Surface Drainage

Surface water generally flows from south to north, following the incline of the escarpment face. Runoff from the road and the uphill slope is intercepted by the roadway and conveyed via roadside swales to catchbasins located near the intersection of James Mountain Road and Inglewood Drive.

The swale on the south side of the roadway consists of paved asphalt in some locations, and natural talus material at others. It is likely that some runoff is infiltrating into the road base through the swale, and contributing to failure of the road base and shallow failure of the north slope adjacent to the roadway.

Overflow of the north asphalt curb is resulting in erosion and slope failure. In addition, poor drainage is contributing to failure of the historic stone wall on the north side of James Mountain Road, at the base of the escarpment.

Runoff spills out of both swales and across the roadway surface at several locations during moderate to severe storms. This constitutes a hazard for motorists.

The existing storm sewer system extends from James Street to just south of the entrance of the Scout House. The downstream storm sewer system has been adequately designed to accommodate minor flows, however, the location and number of catchbasins is inadequate to adequately capture

surface water. The area serviced by the existing storm sewers is outside of the current study area and runoff not intercepted by the existing catchbasins does not impact on the study area.

Runoff is contributing to the failure of the road base, the downhill slope, and the historic stone wall at the base of the escarpment. During moderate to severe storms water runs across the road in several locations and constitutes a hazard for motorists.

3.3.5 Groundwater

During a geotechnical investigation conducted in 1989, boreholes and probes were augured at various locations along this section of the Niagara Escarpment, to depths ranging from 0.6 metres to 7.6 metres. No free water was detected in any of the boreholes during and upon completion of the drilling.

The ground water table has not been encountered during previous investigations.

3.3.6 Tree Survey and Plant Community

Tree Survey

A tree survey was conducted as part of the Environmental Inventory. For the purposes of this study trees within 20 metres downslope and 10 metres upslope of the existing edge of road were inventoried. These limits are assumed to be the limits of potential impact by any proposed changes to the road. A total of 298 trees are tagged and inventoried along the escarpment in this area.

Trees tagged have trunks ranging in size from 10 to 120 cm in diameter. Although hardwood species are prevalent, which is typical of undisturbed escarpment forests in the Hamilton region, the

majority of trees are exotic species which have become established on the slopes. These are contributing to shading and suppression of understorey development.

A preservation priority rating (P.P. 1 to P.P. 3) is assigned to each tree surveyed. Each rating is based on the following assessment criteria:

- P.P. 1 High to medium biological condition, good crown form. Can survive under existing conditions indefinitely;
- P.P. 2 One or more defects in biological health or crown condition, or only marginally suited for roadside conditions. Can survive at least 3-5 years under existing conditions;
- P.P. 3 Low biological condition, severely damaged/defective, unsuitable for urban uses. Not expected to survive more than 3 years under present conditions.

Seventy-four (74) trees are rated as P.P.1, 106 as P.P. 2, and 118 as P.P. 3.

No significant wildlife use of trees along the road corridor is evident. For example, no evidence of raptor or mammal nests, cavity feeding or trees inhabited by honey bees was noted. Twenty-four trees of special aesthetic prominence based on their size and landscape prominence were noted (see Figure 5).

Plant Communities

Sixteen plant communities are located on the slopes adjacent to the existing roadway. These communities are distinguished by the combination of canopy dominance, density of cover, and prevalent soil conditions. The botanical rating of the entire study area is low, based on the predominance of exotic species in the main canopy, understorey and groundcover. Groundcovers are generally sparse in all but the most open plant communities due to the north-facing slope, the steep grades, and the relatively dense main canopy.

For these reasons, understorey vegetation provides very limited seasonal screening along most of the lower slope.

The Hamilton-Wentworth Natural Areas Inventory (1993) reports the existence of wild yam (*Dioscorea quaternata*), a rare vascular plant species, in the Environmentally Significant Area that includes the James Mountain Road study area. Field research, however, reveals no evidence of this plant species in this area. This can be expected because the study area is too heavily disturbed to support this species, which normally grows in moist thickets.

Evidence of soil slumping/erosion, talus movement, and dumping of fill and debris, is noted in several communities. Surface soils are high in humus content on the downhill slope, whereas the uphill slope is lacking in humus and often bare soil is exposed. Particular constraints for growth of woody species in the uphill area are proximity to bedrock, damage from rockfall, and low availability of humus.

During the field assessment, it was noted that exhaust fumes from the roadway tended to concentrate in the canopy rather than dilute by wind and convection. Although no evidence is available as to the relative abundance and toxicity of emissions in this location, the site may be prone to stagnation and concentrations of emissions. This would have a direct bearing on present canopy composition and the inability to sustain certain forest tree species and quality groundcovers.

The overall botanical rating of the study area is low based on the predominance of exotic species in the main canopy, understorey and groundcover. No significant wildlife uses of the trees along the road corridor is evident. Twenty-four trees have a special aesthetic prominence.

3.3.7 Wildlife

Six mammals were sighted or identified on the basis of their tracks. Thirty-six species of birds are recorded as breeding in the wildlife inventory area. Of the bird species sighted, 97% were observed on the north side of James Mountain Road. Two herptile (reptile and amphibian) species and eight butterfly species were also observed.

Wildlife habitat quality is moderately higher on the north (downhill) side of the existing road due to man-made brush piles and occasional damp swales emanating from the escarpment. The habitat quality improves westward as the impact of debris dumping on the slope becomes less prevalent on more secluded lots.

The Hamilton-Wentworth Natural Areas Inventory (1993) identifies the regionally rare Northern Ringneck Snake (*Diadophis punctatus edwardsii*) and the nationally and provincially rare Carolina Wren (*Thryothorus ludovicianus*) as significant species in this area.

In the present study, no sightings of Carolina Wren were made. This species, which is at the northern limit of its breeding range in this region, favours well-developed thickets and brush for nesting. Some potential nesting habitat with this character is located on the wooded edge of lots facing onto Inglewood Drive. However, evident disturbances such as trampling and refuse disposal could discourage nesting.

The Northern Ringneck Snake has been sighted in several locations of the escarpment over the past five years. Preferred habitat includes moist areas with rotting logs, fallen bark and slate such as at the base of slopes. Normal food for this species includes salamanders, slugs, and other invertebrates. In the present study, potential habitat with an ample supply of Red-Backed Salamanders is located at the wooded edge of lots facing onto Inglewood Drive. A concerted effort was made to locate Ringneck Snakes in this area one morning at dawn and two evenings at dusk. No sightings were made. Given the complexity of

area habitat, and the habit of the species in forming localized colonies, it may have been overlooked.

A single adult broad-winged hawk, a regionally significant species, was observed on June 9, 1995, but it was not confirmed as breeding in the immediate study area. This species normally requires extensive woodlots to maintain its breeding territory, and the limited corridor of habitat through the study area would likely compromise the chance of it breeding successfully. Other forest interior indicator species were noted, accentuating the importance of the restricted escarpment greenspace corridor within an otherwise urbanized landscape.

The two significant wildlife species noted for this area were not found during the fieldwork for this study.

In general, wildlife habitat conditions are better on the north (downhill) side of the road.

3.4 SOCIO-ECONOMIC ENVIRONMENT

The historical growth and development of Hamilton as a major, Canadian, industrial city has been determined to a very large degree by its geographical location and the influence of local physiography and topography. These local physiographic conditions have been substantially modified by human settlement activities over the past two hundred years. The following sections describe the built environment that has been created and the government policy that guides development.

3.4.1 Existing Land Use

Existing land uses within the study area include: institutional, commercial, open space, and residential (see Figure 5). A site visit conducted on May 4, 1995 confirmed the predominate land use of adjacent property to be residential.

Starting at the intersection of Gateview Drive and West 5th Street and moving in a northeasterly direction to the north end of the Study Area at Inglewood Drive, the land uses are:

North/west side of the road:

- institutional use (Hamilton Psychiatric Hospital);
- Niagara Escarpment;
- residential uses, predominately single-detached dwellings; and,
- commercial uses (professional business offices, retail uses).

South/east Side of the road:

- residential dwellings, predominately single-detached dwellings (a home occupation use was noted at 133 Gateview Drive);
- Niagara Escarpment;
- institutional Uses (Scout House, St. Joseph's Hospital);
- commercial (Scout House's retail outlet); and,
- residential (single detached dwellings and apartments).

Lands abutting the south side of the roadway are for the most part publicly owned, whereas lands on the north side are privately owned.

The major land use in this area is residential. Lands on the north side of the road are generally privately owned.

3.4.2 Future Development

James Mountain Road is located within an established urban area. Discussions with city/regional planning staff and a review of secondary sources indicate that there are no current development proposals to substantially alter local conditions and/or intensify land use activity within or adjacent to the James Mountain Road.

There are no expected new developments in the study area.

3.4.3 Visual Character

The James Mountain Road corridor offers motorists a visual experience unusual in most modern urban settings, and is in sharp contrast to other vehicular escarpment crossings in the City of Hamilton. James Mountain Road briefly exposes the road user to a 'natural' experience that contrasts the urban setting above and below the escarpment.

Particular visual attributes of the corridor are:

- a continuously vegetated landscape on both sides of the roadway;
- a curving road which heightens the visual experience by directing long views into shadowy forests when travelling in either direction;
- a tree canopy and the proximity of trees to the road that effectively frame and limit the visual impact of the pavement in a nature-dominated landscape;
- the steep road and the steep slope across the face of the escarpment that expose the user to a strong sense of altitude;
- trees, escarpment geology and man-built elements such as the Claremont Access ramp, concrete barrier and walls that provide a succession of points of visual interest along the alignment when travelling in either direction;
- the steep uphill slope (south of the roadway) that focuses attention on the well-defined edge of roadway when descending;
- in the growing season, the trees on the downhill (north) side are a visual barrier to the

residences immediately downslope, and to the urban area;

- the guide rail is a relatively subtle linear element which delineates the roadway and complements the 'soft wall' effect of the adjoining forest; and
- the degree of visual penetration into the downslope area varies seasonally.

The visual character of James Mountain Road is unique in an urban setting. Visual attributes of the road include, the surrounding vegetation, the alignment and steepness of the road, and the successive points of visual interest created by the Claremont overpass, the walls and other man-built elements.

3.4.4 Noise

The Project Team determined the potential noise impact that residents along James Mountain Road might experience if roadway design modifications are undertaken. For the purposes of this study, 10 receptor locations were selected to represent the study area noise environment (see Figure 7). Existing sound level calculations are primarily based on the average daily traffic volumes, percentages of medium and heavy trucks, posted speed limits, horizontal and vertical road to receptor distances, roadway gradient, pavement type and the type of vegetation between the road and the receptor. This approach to noise assessment is consistent with the Ministry of Environment and Energy/Ministry of Transportation Noise Protocol (February 1986).

Nine out of the ten receptors selected experience daytime sound levels that range from 56.0 dBA (Receptor 6) to 61.4 dBA (Receptor 2). Receptor 7 experiences 41.3 dBA.

Noise mitigation is warranted if the future sound

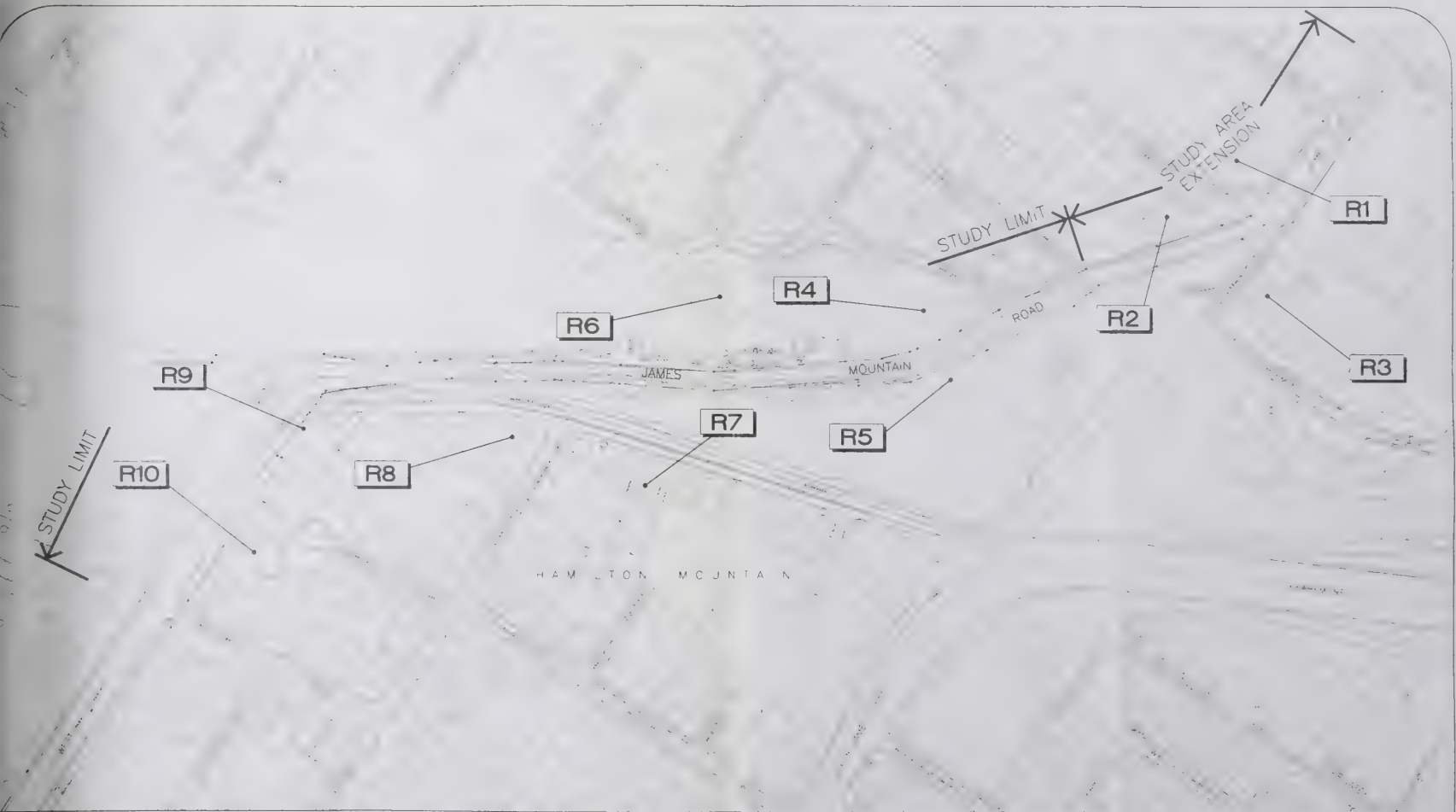


FIGURE 7
NOISE RECEPTOR LOCATIONS

level resulting from the project is greater than 5 dBA above the existing sound level and the absolute level is higher than 55 dBA.

3.4.5 Government Policy

In 1990, the Niagara Escarpment was inaugurated as an International Biosphere Reserve by the United Nations Education, Scientific and Cultural Organization (UNESCO). This designation recognizes the natural features and ecological importance of the Escarpment and endorses the Niagara Escarpment Plan.

Niagara Escarpment Plan

Under the Niagara Escarpment Planning and Development Act, the Niagara Escarpment Plan is the policy document that addresses how development should occur in this area.

Much of the Study Area is designated *Urban Area* in the Niagara Escarpment Plan. This designation recognizes existing urban development in the local and regional planning documents. The escarpment located between Claremont Drive and Inglewood Drive, is designated *Escarpment Natural Area*.

The Niagara Escarpment Plan policies for the *Urban Area* state that, "*Changes to the permitted uses, expansions and alterations of existing uses...within the Urban Area designation will not require an amendment to the Niagara Escarpment Plan.*"

The *Escarpment Natural Area* designation permits "*essential transportation and utility facilities*" subject to certain Development Criteria being implemented to ensure that the least possible change occurs in the environment and the natural and cultural landscape. This Development Criteria (Section 2.15: Transportation and Utilities of the Plan) states,

"1. *All new and reconstructed transportation and utility facilities shall be designed and located to minimize the impact on the*

Escarpment environment and be consistent with the objectives of this Plan. Examples of such site and design guidelines include the following:

- a) *Blasting, grading and tree removal should be minimized where possible through realignment and utilization of devices such as curbs and gutters, retaining walls and tree wells.*
- b) *Finished slopes should be graded to a 2 to 1 slope minimum and planted; large cuts should be terraced to minimize surface erosion and slope failure.*
- c) *Site rehabilitation should use native species of vegetation and blend into the surrounding landscape.*
- e) *Transportation and utility structures should be sited and designed to minimize visual impact.*
- h) *The visual impact of utility structures and service roads should be minimized by siting, structural design, colouration and landscape planting in order to minimize the impact on the Escarpment environment.*
- i) *Transportation and utility facilities should be sited and designed to avoid or minimize the impacts on parks, open space and the Bruce Trail. Where Trail impacts cannot be avoided the objective will be to provide for an acceptable, safe alternative.*

2. *New transportation and utility facilities should avoid the Escarpment Natural Areas."*

The reconstruction of James Mountain Road is not a "new facility" and, therefore, is a permitted use in the Niagara Escarpment Plan.

Furthermore, much of the existing road within the Study Area is located in the Niagara Escarpment Development Control Area. Ontario Regulation 190/93 exempts certain classes of development from the requirement of obtaining a Development Permit from the Niagara Escarpment Commission, including:

"5(4) *The maintenance or renewal of municipal roads.*

- 5(5) *The construction, erection, installation, maintenance or renewal, as the case may be, of lanes, sidewalks, curbs, gutters, street signs and street lights on municipal roads.*
- 5(6) *The maintenance or renewal of sewers, mains, pipes, cables or other apparatus connected with public utilities, including the breaking open of any street or other land for that purpose."*

Ontario Regulation 151/90

In accordance with Ontario Regulation 151/90 made under *The Conservation Authorities Act*, R.S.O. 1990, a permit is required from the Hamilton Region Conservation Authority prior to any alterations to the Escarpment.

Regional Municipality of Hamilton-Wentworth Official Plan

The Study Area is located within the *Urban Area* of the Regional Municipality of Hamilton-Wentworth Official Plan designation. Development is permitted within the Urban Area.

The Niagara Escarpment is identified as an *Environmentally Significant Area* by the Plan. It recognizes "*essential transportation and utility facilities*" as a permitted use on lands designated *Escarpment Natural Area* by the NEP.

The Plan classifies James Mountain Road, West 5th Street and James Street South as *arterial roads*. Policy 4.3.1.2(c) identifies arterial roads as "*strategic links in the road network needed to carry relatively high volumes of long distance traffic within, between or through Area Municipalities, and/or to provide access past major geographic barriers and to inter-regional highways.*"

Other relevant road network policies include:

- 4.3.1.1 *[The Region will] Adopt the road system shown on Map No. 6, as the framework necessary to support the land use*

strategy defined by this Plan.

- 4.3.1.11 *[The Region will] Require the use of landscaping and other techniques that minimize the visual and noise impacts from roadways on adjacent residential development or in the immediate vicinity of existing or proposed arterial roads.*

- 4.3.1.12 *[The Region will] Consider the following in the establishment of the right-of-way and the design of new roads and the reconstruction of existing roads:*

- a) *requirements for pedestrian movements along and across the roadway including provisions in the right-of-way for adequate sidewalks, centre median pedestrian refuges, wheel-chair ramps and cross walks;*
- b) *demands for bicycle use along the roadway. Where indicated in the Regional Bicycle Commuting Network Plan (as may be revised from time-to-time), sufficient bicycle facilities will be provided if possible;*
- c) *impact of road and traffic on surrounding land uses;*
- d) *use of the rights-of-way as a location for trees and plants that reduce dust movement and improve air quality; and*
- e) *impact of the roadway on historical, cultural and recognized archaeological resources".*

City of Hamilton Official Plan

The City of Hamilton Official Plan designates James Mountain Road and the Niagara Escarpment as *Open Space*, and the immediate surrounding lands as follows: *Major Institutional* (i.e., Hamilton Psychiatric Hospital, St. Joseph's Hospital and Scout House), *Commercial* (i.e.,

section of land opposite St. Joseph's Hospital) and *Residential* (see Figure 5).

The Study Area is divided into four neighbourhoods:

- Durand Neighbourhood (north of the Escarpment);
- Corktown Neighbourhood (north of the Escarpment);
- Southam Neighbourhood (south of the Escarpment); and
- Mohawk Neighbourhood (south of the Escarpment).

Neighbourhood plans exist to guide re/development in these neighbourhoods.

Special Policy Areas 1a, 1c and 3 also apply to the Study Area. The intent of Special Policy Areas 1a and 1c (Policy A.2.9.1 of Plan) is to protect and preserve the attributes of the Niagara Escarpment, and to implement policies which conform with the Niagara Escarpment Plan. The intent of Special Policy Area 3 (Policy A.2.9.3.1) is to promote and protect housing within the Central Area to ensure the future viability and health of the Central Area.

Schedules "C," and "D" to the Official Plan designate the Niagara Escarpment as *Hazard* and *Environmentally Significant Area*, respectively. Schedule "F" identifies James Mountain Road, West 5th Street and James Street South as regional *Arterial* roads in accordance with the Regional Plan, while Schedule "H" identifies the Study Area as part of a *Community Improvement Area*.

The Road Network policies of the Official Plan also state that, "...Council will, where deemed necessary and with the cooperation of the Region, initiate construction and maintenance programs to improve the safety and operation of the ROAD NETWORK." (Policy B.3.1.8), and "...only essential transportation facilities will be permitted within the Natural Escarpment Area, as identified by Special Policy Area "1a" on Schedule "B" - Special Policy Areas and Schedule "B-3" - Other Special Policy Areas. In addition, all

transportation facilities proposed within the area of the Niagara Escarpment Plan must conform to the policies of that Plan (O.P.A. No. 123)" (Policy B.3.1.21).

The development of the Niagara Escarpment is governed by the Niagara Escarpment Plan, the Regional Official Plan, the City of Hamilton Official Plan and Ontario Regulation 151/90.

According to the Niagara Escarpment Plan, the road traverses the Escarpment Natural Area. Therefore, only essential transportation facilities are permitted. Furthermore, the design, location and construction of these facilities must adhere to criteria set out by the Niagara Escarpment Commission.

The Regional Official Plan identifies the Escarpment as an Environmentally Significant Area and also permits only essential transportation facilities. The Regional Plan designates James Mountain Road as an arterial road. Moreover, this Plan indicates that provisions for pedestrian movement along and across the road should be considered.

3.5 CULTURAL ENVIRONMENT

James Mountain Road is over 150 years old and is a cultural heritage resource. Accordingly, a survey was undertaken by the Project Team to identify the road's physical integrity and condition, as well as to identify any other associated heritage features within the study area.

3.5.1 Cultural Landscape

The historical maps of James Mountain Road during the 1840's and 1950's show a narrow road that has been widened over the years from a one-lane, rock and mud track to a paved, two-lane facility. No documentary evidence was found to determine the precise construction dates or materials used in construction. It is probable that the route was successively reconstructed and the

road bed raised at various times to permit an all-weather surface.

Roadway Character

Currently, the majority of James Mountain Road is a two-lane paved road without shoulders. The exceptions are the James and West 5th Street approaches, from the north and south respectively.

Along the entire length of the road, there are few level or straight portions. The road generally follows the underlying land forms, most notably the former lake terraces that account for the relatively moderate slope across the scarp face. There are several jogs or curves that open up a short series of views and vistas. This "serial vision" is considered to be an asset and directly contributes to the positive scenic character of the road. Glimpses of downtown Hamilton, rock outcrops, stone embankments, trees and the roadscape itself must be considered an important component of the Hamilton escarpment landscape.

The narrow road permits a sense of closeness with the surrounding environment. The road is an integral part of the landscape rather than being a feature separate, apart and distinct from its surroundings. This "fit" is considerably enhanced by the trees on either side of the road that in several areas form canopies over the road.

By contrast, the approach sections of the road have wider travelled lanes, soft shoulders or concrete sidewalks and the general absence of tree canopies that are markedly "urban". The sense of enclosure is absent.

Thus, although the two-lane portion of James Mountain Road has been paved, it is relatively unaltered and maintains a high degree of physical integrity.

Walls

A number of walls are proximal to the existing road (see Figure 5). These are briefly described below.

1. Ballinahinch Wall

A low wall on the west side of the road, extends from St. James Place to Aberdeen Avenue. It is comprised of stone and concrete units, heavily repointed and parged in several areas.

Although the wall is in poor condition, gate posts at the entrance to Ballinahinch (316 James Street South) appear to be in relatively sound condition. The gate posts are capped and feature square, banded, vermiculated-stonework. It is believed that these posts have been relocated from the original entrance to Ballinahinch, that was further south.

This wall is altered and possesses a low degree of physical integrity.

2. Inglewood Wall

The Inglewood wall, also located on the west side of the road, extends from Inglewood Drive northerly to two outbuildings adjacent to James Mountain Road. The wall is crenellated and finely crafted. It comprises a series of stepped sections with clearly defined crenelles (the openings) and merlons (the raised parts). Both crenelles and merlons are capped with individual coping stones with rolled moulding. In several locations, open cracks are evident in the wall.

This is the last remnant of the wall that originally surrounded the Inglewood estate. Its retention to the present day may be due to its continuing function as a retaining wall. The stone gate posts, at the former rear entrance to the Inglewood estate, comprise capped, octagonal piers formed from a variety of individual masonry units.

This wall is well preserved and possesses a high degree of physical integrity.

3. Claremont/Hospital Grounds Wall

This concrete wall is located on the west side of West Fifth Street/James Mountain Road. The

origin of this wall is unknown. The wall comprises a number of individual sections, approximately 15 to 16 feet in length. The concrete is composed of a large and coarse, aggregate mix. This mix together with the effects of road salt and freeze/thaw cycles have caused extensive spalling. The wall is surmounted by formed, concrete coping with metal railings. Also evident are the remains of one concrete lamp post without its lantern and the remnants of a truncated, concrete lamp post.

This wall is altered and possesses a low degree of physical integrity.

4. *Claremont/James Mountain Road Embankment Wall*

This concrete wall is located on the east side of West Fifth Street/James Mountain Road on the inside of the relatively sharp curve at the top of the escarpment. This embankment wall is composed of sawn blocks of concrete aggregate paving or remnant pieces of a concrete pad. The construction date is unknown and for the purposes of this assessment, this feature is not considered to be a cultural heritage feature.

James Mountain Road, in the Escarpment Natural Area, and the Inglewood Wall are cultural heritage resources that maintain a high degree of physical integrity.

3.5.2 Heritage Features

The historical overview and field survey reveal the following cultural heritage features in the environs of James Mountain Road (see Figure 5):

- 268, 262 and 252 James Street South designated under Part IV of the Ontario Heritage Act;
- 316 James Street South, "Ballinahinch", designated under Part IV of the Ontario

Heritage Act;

- the Durand-Markland Heritage Conservation District designated under Part V of the Ontario Heritage Act, but notably 1 Markland Street that is adjacent to James Street South;
- a number of individual cultural heritage properties, namely residences that are listed, but not designated, in the City's Inventory of Buildings of Architectural and/or Historical Interest, notably 13-15 Inglewood Drive, 1 St. James Place and 3, 5 and 11 Inglewood Drive;
- 363 James Street South, a red-brick residence speculated to be associated with the Hamilton and Barton Incline Railway;
- an 1890's stone residence to the south of 363 James Street South;
- the former right-of-way of the Hamilton and Barton Incline Railway;
- the former James Street Reservoir (now the Scout House) located to the south of the Hamilton and Barton Incline Railway; and
- the possible historical archaeological potential in the environs of the Hamilton and Barton Incline Railway and the former blacksmith at the crest of the escarpment. Past soil and ground disturbance may have affected these sites.

There are several privately owned properties and structures that are cultural heritage features outside of the road allowance but within the study area.

CHAPTER 4

Problem Identification

4.0 PROBLEM IDENTIFICATION

The preceding chapter identified a number of existing conditions that the planning process should address when contemplating changes to James Mountain Road.

The information in Chapter 3.0 establishes the foundation upon which the entire planning process is based, i.e., the identification of alternative transportation solutions and designs. Since the problem statement drives the planning process, it is important to involve stakeholders as early as possible, in order to confirm initial findings, expand the scope of the study if needed, and begin discussing alternative solutions.

4.1 STAKEHOLDER INPUT

The Project Team held a Public Meeting February 15th, 1995 between 7:00 p.m. and 10:00 p.m. at the Hamilton Public Library, 55 York Boulevard. The event was advertised in the Hamilton Spectator, and the Hamilton Mountain News on February 4th, 1995. A television advertisement was also aired on Cable 14 TV Hamilton from February 11 to February 15, 1995. In addition, approximately 550 brochures were mailed on January 20, 1995 to area residents and businesses (see Appendix A).

Individuals attending the Public Meeting were encouraged to sign the visitor registry. In total, 18 people signed-in.

The purpose of Public Meeting #1 was threefold:

- i) provide the public an opportunity to become an integral part of the study;
- ii) identify existing problems associated with James Mountain Road; and
- iii) provide the public an opportunity to ask questions and discuss possible solutions with the Project Team.

The comments participants raised during the event are separated into the following categories:

Traffic Operations and Safety

Problems Identified:

- morning rush hour back-ups
- serious accidents
- speeding
- need to alleviate weaving at bottom (access to Freeman Place)
- lanes currently too narrow for large vehicles
- traffic is heavy, dirty and noisy
- stormwater drainage is inadequate
- can the guard rail be made secure without doing much else?
- can't make road safe, too steep
- unsafe road
- can road be made safe without widening?

Proposed Solutions:

- realign curves to improve safety, particularly at the top
- widen on the uphill side because the City owns this land
- construct a tunnel
- make it two-way traffic all the time, part-time two-lanes up-bound is confusing
- provide escape ramps
- rethink entrance to St. Joseph's Hospital's parking garage
- provide a narrow road to reduce speeding/straight road leads to greater speeds
- provide a short section for buses and slow vehicles to pull over and allow passing (doubles as an emergency lane)
- restrict access to buses and/or pedestrians only (full or part time) and redirect all others to Claremont Access
- make it one-way all the time (interim measure)
- increase police enforcement (now) because of speeding
- examine other solutions to speeding
- provide signs reminding drivers to slow down
- repair and maintain what's there now (no more, no less)
- re-route James Mountain Road to the south
- reopen council's decision to NOT add lanes or new routes

Pedestrian Access and Safety

Identified Problems:

- no space for disabled vehicles to pull off and motorist to walk for assistance
- no place for pedestrians to walk
- can road be made safe with pedestrian access improvements ONLY?
- no pedestrians there now, so why build a sidewalk?
- people will walk there if there is a sidewalk
- need for sidewalk to access hospital, safety for women
- no signs directing pedestrians/cyclists to stairs
- need safe separation between vehicles and pedestrians
- stairs are too isolated

Potential Solutions:

- be creative or eliminate pedestrian access
- sidewalk (if required) on south side
- cantilevered walk on north side
- elevated or at level of road
- elevated walkway may degrade safety
- sidewalks could be used to walk bicycles (stairs too steep to carry bikes)
- something less isolated (than walkway) can be used by bikes
- need to ensure walkways aren't walled in

Slope Stability

Identified Problems:

- concern over the size of any retaining walls;

Proposed Solutions:

- vegetation can cover retaining walls; good job on Claremont Access
- retaining wall on uphill side
- if retaining walls are required, use a rough surface
- widen on the uphill side, because less impact of retaining walls (on south side)

General Comments

- narrow is good
- catchbasins on James Street aren't located in right place
- concern for cost
- beautiful road to drive, do not destroy the beauty

- concern for how wide the road will be
- rebuild Claremont access bridge over top of the road at the same time to minimize traffic disruption, if required
- concern about blasting
- keep as many trees as possible
- leave any cut down trees on the ground to maintain a balanced ecosystem
- discrimination between Mountain and Lower City (Mountain residents can't easily walk to lower city)
- impact of widening on driveways; should show picture of potential property impacts at #75 James Mountain Road
- request for more frequent bus service on the road
- request that a Niagara Escarpment Commission representative attend future public meetings
- wished councillors had listened to public in 1989 and something had been done to the road at that time
- keep a curving road that gives a country look/feel in our city's core

4.2 PROBLEM IDENTIFICATION

Based on input from stakeholders, engineering consultants and Region staff, the following problems are associated with James Mountain Road.

Slope Stability

The escarpment slope adjacent to the north side of James Mountain Road is experiencing a slow, shallow failure, due to placement of fill and on a relatively unstable slope made of talus. As a result, the existing guide rail and some trees with shallow roots are leaning downhill, and the road base is slowly failing, resulting in premature pavement deterioration. If left uncorrected, traffic operations and motorist safety will be jeopardized to the point where the road would have to be closed.

Drainage

Existing stormwater collection facilities are inadequate, resulting in relatively high volumes of water flowing along existing paved swales, water flowing across the travelled lanes and spillage of runoff to the north (downhill) escarpment slope,

causing minor erosion.

Stormwater runoff from the south escarpment slope is likely seeping into the road base, contributing to road base failure and shallow slope failure adjacent to the north edge of James Mountain Road. If left uncorrected, work undertaken to stabilize the failing slopes will be undermined by inadequate drainage.

Motorist/Pedestrian Safety

There are two types of pedestrians that use this road: intentional pedestrians who choose to walk along the road instead of using the James Street stairs; and unintentional pedestrians who are stranded motorists walking to seek assistance. The existing road lacks a continuous walkway for pedestrians. Pedestrians currently walk in the travel lanes or in the narrow space (approximately 0.3 metres) between the guide rail and travel lane.

Throughout the EA process, stakeholders remained divided as to whether pedestrian access and safety was a problem. Some stakeholders maintain that the low breakdown rate, the low number of pedestrians and the absence of pedestrian involved collisions indicate that there is no pedestrian access/safety problem. Others assert that the incident/breakdown rate is not low, the stairs are too isolated to be safe from crime, the stairs are too difficult to climb for some people, and the road requires a safe area for those who intentionally and unintentionally walk along the road, regardless of pedestrian frequency.

The lack of a designated area for pedestrians on a vehicle intensive arterial road is considered a problem. In addition, the Region is trying to promote walking as a means of transportation, and the Regional Official Plan requires that pedestrian amenities be considered during the reconstruction of roads. Therefore, improvements to pedestrian safety and access are also considered as an opportunity in this study.

Traffic Operations and Safety

Based on public comments and a review of available information on James Mountain Road, traffic operations and safety have been identified as existing

roadway problems. In particular, a relatively high collision frequency and rate, lanes too narrow to accommodate existing and expected municipal bus traffic, speeding, and the lack of a refuge area for disabled vehicles.

4.3 PURPOSE OF THE UNDERTAKING

The purpose of the undertaking is to resolve the slope instability, stormwater drainage, roadway safety and pedestrian/motorist access problems identified, as well as to ensure that the function of the roadway reflects future needs, while minimizing impacts on the natural, socio-economic and cultural environment.

In particular, the objectives of the study are as follows:

- to consider various transportation solutions and corresponding designs that fully address the problems identified;
- to ensure that the preferred design meets the future needs of the community;
- to minimize any impact the preferred alternative will have on the character of the road;
- to minimize environmental impacts and mitigate those impacts which cannot be avoided; and
- to incorporate the policies of Vision 2020 and the Regional Official Plan in the design.

CHAPTER 5

Planning Solutions

5.0 PLANNING SOLUTIONS

The process used to develop, compare and select a preferred set of solutions to the problems identified in the previous chapter, involved:

- the generation of reasonable solutions, including the "do nothing" alternative;
- the selection of an evaluation method and factors to compare alternative solutions;
- the assessment of impacts and evaluation of alternative solutions;
- the selection of a set of recommended solutions;
- public and agency review of the alternative solutions, evaluation approach and the selection of the recommended set of solutions;
- if required, the re-examination of problems, solutions, and the evaluation approach (including any new solutions and evaluation criteria) as a result of stakeholder consultation to determine if the Region's recommended solutions were still appropriate; and
- the selection of a set of preferred solutions.

5.1 GENERATION OF REASONABLE SOLUTIONS

The problems the public, government representatives, and Project Team members must resolve through the Class EA planning process are:

Structural Problems

- slope instability; and
- poor drainage;

Safety/Operational Problems

- inadequate pedestrian/ motorist access/safety; and

- unsatisfactory traffic operations/safety.

The following sections list the alternative solutions generated for each problem identified. The "do nothing" alternative is included in each list to serve as a benchmark against which the consequences of all other alternatives can be measured. *A decision to "do nothing" is typically made when the impacts, both financial and environmental, of all other alternatives significantly outweigh the benefits of solving the problem.*

5.1.1 Slope Instability

The escarpment slope adjacent to the north side of James Mountain Road is experiencing a slow, shallow failure due to the placement of fill on a marginally stable talus slope. The failure is evident by the tilting guide rail and the leaning trees adjacent to the road. Also, longitudinal cracks in the pavement in the upbound lane are attributable to the unstable slope.

Potential solutions to this problem are:

1. *Do Nothing*

- no major construction work (i.e., no walls or stabilization with vegetation); and
- routine maintenance (i.e., re-erecting the existing guide rail using deeper posts and patching the pavement).

This alternative allows the slope failure to continue.

2. *Structural Improvements*

- construction of a retaining wall; and/or
- construction of reinforced earth embankment.

This alternative involves construction beyond the existing edge of pavement on the downhill side of James Mountain Road. If selected, the limits of construction would be determined in the next phase of the Class EA planning process (i.e., Phase III - Design Alternatives). However, under current

construction practices, it is reasonable to expect that the area of disturbance from construction would be approximately 3 metres from the existing edge of pavement. This assumes that the roadway would generally follow the current alignment and be kept as narrow as possible.

3. *Non-Structural Improvements*

- stabilizing the slope by planting deep-rooted vegetation and other natural techniques.

Since the slope failure tends to be surficial, deep rooted vegetation and other natural slope stabilization techniques may be effective.

Regrading the existing 1 horizontal to 1 vertical (45°) slope to meet Niagara Escarpment Commission 2 horizontal to 1 vertical slope requirements is not considered a reasonable solution. In order, to achieve the desired grade, a substantial amount of regrading work would be required. This work would disturb much of the natural slope.

5.1.2 Drainage

Existing stormwater facilities (i.e., paved swales) cannot adequately manage high water flows. In typical rain falls water crosses the travelled lanes, creating safety hazard, and spills on to the north (downhill) escarpment slope, causing minor erosion.

Stormwater runoff from the south (uphill) escarpment slope is seeping into the road base, contributing to road base failure and shallow slope failure adjacent to the north edge of James Mountain Road. If existing facilities are left uncorrected, work undertaken to stabilize the failing slopes will be undermined.

Potential solutions to this problem are:

1. *Do Nothing*

- no construction of storm sewers; and

- no improvement of existing roadside ditches.

This solution does not address the problem.

2. *Provide Storm Sewers*

- extend the storm sewer system up James Mountain Road, including the installation of catchbasins and curb and gutter.

The existing swales would be replaced with catchbasins, curbs and gutters. Construction activity would take place within the existing road allowance.

3. *Improve Surface Drainage*

- utilize ditches where possible; and
- improve the ditches and ditch inlets to prevent water from flowing across James Mountain Road.

Construction activity would extend approximately 2 metres beyond the north and south edge of pavement.

It is sometimes possible to drain an area by encouraging groundwater infiltration (i.e., directing runoff to the groundwater table using dry wells or encouraging flow over permeable surfaces). This solution to the James Mountain Road drainage problem is unreasonable because, water infiltrating the slope is already causing slope stability problems.

5.1.3 Pedestrian/Motorist Access and Safety

The existing road lacks a continuous walkway along either side of the roadway for pedestrians. While pedestrian traffic is, at present, relatively light, the lack of a continuous walkway presents a safety problem for pedestrians choosing to walk along James Mountain Road.

From a Regional policy perspective, Vision 2020 promotes walking as a primary means of transportation, and the Regional Official Plan

mandates consideration for pedestrians that wish to move along the road allowance.

The steel stairs, located to the east of James Mountain Road, provide a pedestrian access service. However, some of the public is reluctant to, or will not, use the stairs because they are too isolate. Moreover, some stakeholders indicated that, because of a medical condition or physical ailment, they could not use the stairs, but they could walk along James Mountain Road.

Motorists, whose vehicles breakdown in the natural area, lack a safe walkway area to access emergency phones at the top and bottom of the hill. This problem applies primarily to vehicles that travel in an uphill direction (vehicles travelling downhill should be able to coast to the shoulder area at the bottom of James Mountain Road).

Regional staff have relied on the observations/opinions of the Hamilton-Wentworth Regional Police and James Mountain Road residents to estimate the number of times vehicle breakdowns occur. In this instance, 3 to 5 times per week appears to be a reasonable estimate.

Potential solutions to the aforementioned problems include:

1. Do Nothing

- no construction of a designated "space" for pedestrians along James Mountain Road;
- no improvements to existing stairs; and
- allow pedestrians to continue using James Mountain Road without making changes.

This solution does not address the identified problem.

2. Prohibit Pedestrians on James Mountain Road

- erect signs and initiate enforcement to prohibit pedestrians from using James Mountain Road; and
- remove the emergency phones from the top and

bottom of the escarpment.

Pedestrians currently using James Mountain Road would have to use the stairs. In the event of a motor vehicle breakdown, accident, or emergency, motorist would be required to stay in their vehicles and wait for help to arrive.

3. Improve Access/Safety of Stairs and the Sidewalk through Southam Park

- improve existing lighting; and
- construct bicycle "trough" to accommodate cyclists.

This solution would somewhat address the needs of pedestrians. However, this solution does not address the problem of safety for stranded motorists seeking assistance (i.e., unintentional pedestrians), or those who physically can not use the stairs.

4. Make Provisions for Pedestrians along James Mountain Road

- construct a designated walkway "area" for pedestrians and stranded motorists to access emergency phones and other desired locations.

This solution would involve widening the existing cross-section approximately 2 metres to accommodate pedestrians, and stranded motorists requiring emergency service.

Providing more emergency phones is not considered a reasonable solution because motorist cannot be expected to always break down where an emergency phone is provided. They would still have to walk to the nearest phone. Furthermore, this solution would not satisfy the pedestrian who intentionally chooses to use James Mountain Road as a thoroughfare.

5.1.4 Traffic Operations/Safety

Based on a review of available information on James Mountain Road and public comments, traffic

operations and safety is a problem. In particular, collisions, speeding, and periodic congestion (i.e., disabled vehicles blocking up bound travel lanes) have been identified as problems.

1. Do Nothing

- perform temporary repairs to the existing road surface (spot improvements), guide rail and retaining wall near Inglewood Avenue.

This solution would likely have to be repeated every five years and more frequently depending on the weather conditions and drainage solutions. The typical life span of a roadway, before repaving or other remedial action, is 20 to 25 years.

2. Non-Structural

- erect warning and regulatory signs to further control traffic (i.e., reduce collisions and control speeding); and
- increase police enforcement of the rules of the road.

This solution would improve traffic operations and safety, however, it would not correct the physical features of the roadway that present an unusually high risk of an accident occurrence. Moreover, the Hamilton-Wentworth Regional Police will likely only provide sporadic enforcement given existing and expected manpower limitations.

3. Structural

- reconstruct the existing two lane roadway (i.e., replace asphalt and gravel foundation) with consideration for adjustments to the alignment and widening of the road; and
- replace the guide rail

This solution involves widening the existing road beyond the existing right-of-way. Typically, this solution would allow for two 3.5 metre lanes and a 0.5 metre shoulder on both sides of the road to provide support for the pavement structure (i.e., the road base).

The provision of lay-bys or pull-over bays is not considered a reasonable solution to the construction of a continuous refuge area for the following reasons: vehicles travelling upbound on the steep grade must break down at a lay-by to make use of it; the steep grade will likely prevent a vehicle from coasting to an uphill lay-by; and the relatively high volume of traffic will prevent a vehicle from backing-up to a downhill lay-by.

In the downbound direction lay-bys are unnecessary since vehicles, in most cases, can coast to the bottom of the roadway, where an adequate refuge area already exists.

4. New Alignment

- construction of a tunnel; or
- construction of a new mountain access along a different route.

Neither solution is considered reasonable because of the Region's moratorium on new escarpment crossings, and the presence of other less intrusive solutions.

5.2 THE EVALUATION METHOD

An evaluation method is used to establish an order of preference among alternatives.

In this particular study, the evaluation of alternative solutions is performed using a "net impact assessment" method. This approach enables the Project Team to highlight the advantages and disadvantages of each alternative and qualitatively justify why one alternative is recommended over another. Sometimes referred to as the "tradeoff" method, the Project Team identified what is gained and lost if each alternative is chosen.

Before arriving at a recommended alternative the Region reviewed and confirmed with stakeholders the list of evaluation factors used to make the comparison. As well, stakeholders were asked to indicate the relative importance each factor should be assigned. This information helped the Project

Team understand what would be considered an unacceptable impact versus something less serious. With this understanding, the Project Team was able to make decisions as to what stakeholders would or would not consider an acceptable tradeoff.

condition or is relatively very expensive (> \$500,000) to build. Impacts are difficult to mitigate.

N/A: not applicable

At Workshop #1 the public identified a number of concerns with the James Mountain Road project (see Section 4.0). Table 3 shows the relationship between the stakeholders' concerns and the evaluation criteria used to compare alternative solutions.

A positive (+) impact is beneficial to the environment. A negative (-) impact will damage or degrade the environment.

5.3 EVALUATION OF ALTERNATIVE SOLUTIONS

Stakeholders were asked to review and comment on the information that led to the Region's recommended alternative. The results helped to confirm the selection of a preferred solution which was then carried forward for design consideration (Phase 3 - Class EA process).

Tables 4 to 7, describe the magnitude and direction (i.e., positive or negative) of the net impacts generated by each alternative solution. The following terms are used to describe the magnitude of net impact predicted:

- Zero: the solution is predicted to cause no noticeable change in the existing condition or cost nothing to implement.
- Low: the solution is predicted to cause an insignificant change in the existing condition or is relatively inexpensive (< \$250,000) to build. Impacts are easy to mitigate.
- Moderate: the solution is predicted to cause a noticeable change in the existing condition or is relatively expensive (\$250,000 to \$500,000) to build. Impacts are relatively easy to mitigate.
- High: the solution is predicted to cause a significant change in the existing

5.3.1 Slope Instability

The net impact analysis shows that the 'non-structural improvements' solution produces consistently favourable results over the 'do nothing' solution. Therefore, no further consideration is given to the 'do nothing' option.

The non-structural solution produces consistent advantages in the natural environment, and some advantages in the transportation and socio-economic environments. The structural improvement solution produces advantages in long term slope stability, maintenance costs, wildlife habitat and the protection of built features of the cultural environment. Structural improvements also produce disadvantages with respect to loss of trees, visual character, and property impacts.

The long term effectiveness and suitability of structural solutions outweighs the benefits provided by the non-structural solution. Therefore, the structural improvement alternative is carried forward to design because of its ability to provide long term stability to the failing slope.

5.3.2 Drainage

The impact analysis shows that, except for cost of construction, the 'storm sewer' solution produces consistently favourable results over the 'do nothing' solution. Also, except for the cost of construction and the impact on wildlife habitat the storm sewer solution is better in all environments than the 'improve surface drainage' solution. The

TABLE 3: EVALUATION FACTORS FOR THE PLANNING SOLUTIONS

STAKEHOLDER CONCERN	EVALUATION CATEGORY/ Criterion/indicator	RATIONALE
<p><u>Stormwater Drainage</u></p> <ul style="list-style-type: none"> • catchbasins on James Street aren't located in the right place • drainage must be improved • existing drainage problems are contributing to the slope instability <p><u>Slope Stability</u></p> <ul style="list-style-type: none"> • portions of the roadway are currently leaning downhill • the road base is slowly failing, resulting in premature pavement deterioration <p><u>Pedestrian Safety</u></p> <ul style="list-style-type: none"> • no place for pedestrians to walk, • stairs are too isolated • no pedestrians there now, so why build a sidewalk? <p><u>Traffic Safety/Operation</u></p> <ul style="list-style-type: none"> • no space for disabled vehicles to pull off • lanes currently too narrow • serious accidents • need more law enforcement 	<p>TRANSPORTATION</p> <p>1. Roadway Operation and Safety</p> <p>a) roadway flooding</p> <p>b) long-term slope stability</p> <p>c) pedestrian safety</p> <p>d) traffic service</p> <p>e) traffic safety</p> <p>f) speeding</p> <p>NATURAL</p> <p>2. Vegetation Impact</p> <p>a) loss of trees</p> <p>3. Wildlife Impact</p> <p>a) loss of habitat</p>	<ul style="list-style-type: none"> • drainage solutions must be able to accommodate frequent rainfalls and keep the road relatively free of water • runoff is contributing to the shallow slope failures being experienced • the existing slope is only marginally stable and must be stabilized in order to ensure long term stability and prevent premature failure of the pavement • there is an existing safety concern with pedestrians and stranded motorists sharing the narrow travelled way with vehicular traffic • some people feel that the isolation of the James Street stairs makes them susceptible to crime • disabled vehicles interrupt service because there is no place outside of the travelled way to seek refuge • this is an arterial road with a primary function of providing mobility • proposed solutions should correct or enhance the safe operation of the road • excessive vehicular speed may increase accidents and their severity
<p><u>Natural Environment</u></p> <ul style="list-style-type: none"> • keep as many trees as possible • leave cut trees on the ground to maintain a balanced ecosystem • the road traverses an Environmentally Significant Area 		<ul style="list-style-type: none"> • the forested slopes are an important feature of the Environmentally Significant Area • various fauna live in the area

TABLE 3: EVALUATION FACTORS FOR THE PLANNING SOLUTIONS

STAKEHOLDER CONCERN	EVALUATION CATEGORY/ Criterion/indicator	RATIONALE
<p><u>Economic</u></p> <ul style="list-style-type: none"> concern for cost <p><u>Property</u></p> <ul style="list-style-type: none"> do not widen the road sidewalk (if required) on south side stormwater drainage is inadequate <p><u>Roadway Character</u></p> <ul style="list-style-type: none"> keep a curving road that gives a country look and feel in the City's core. 	<p>SOCIO-ECONOMIC</p> <p>4. Cost</p> <ul style="list-style-type: none"> a) cost to build b) cost to maintain <p>5. Property Impact</p> <ul style="list-style-type: none"> a) disrupt property b) displace property c) flood property <p>6. Visual Impact</p> <ul style="list-style-type: none"> a) loss in the visual character of the roadway 	<ul style="list-style-type: none"> changes to the roadway may be expensive to build changes to the roadway may be expensive to maintain changes to the roadway may require partial property acquisition changes to the roadway may require entire property acquisition stormwater runoff may be causing erosion on private property and other damage James Mountain Road offers a unique visual experience for motorist
<ul style="list-style-type: none"> beautiful road to drive, do not destroy the beauty. how wide will the road be? narrow is good 	<p>CULTURAL</p> <p>7. Built Features</p> <ul style="list-style-type: none"> a) disruption to built features b) displacement of built features <p>8. Roadway Character</p> <ul style="list-style-type: none"> a) disruption of roadway character <p>GOVERNMENT POLICY</p> <p>9. Niagara Escarpment Commission Plan</p> <ul style="list-style-type: none"> a) conformity with plan objectives <p>10. Vision 2020/Regional Transportation Review</p> <ul style="list-style-type: none"> a) conformity with Hamilton-Wentworth sustainable development objectives 	<ul style="list-style-type: none"> building of historical significance, may lose property walls of historical significance, may be removed James Mountain Road has not changed significantly in the past 150 years NEC has a responsibility to protect Niagara Escarpment features from development Vision 2020 helps to establish policy that protects community interests the Regional Transportation Review is the Region's plan to create a sustainable transportation system

TABLE 4: SLOPE STABILITY - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

ENVIRONMENT AND EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Structural Solution (retaining wall)	Non-structural Solution (stabilizing with deep-rooted vegetation, etc.)
TRANSPORTATION 1. Roadway operation and safety a) roadway flooding b) long-term slope stability c) speeding d) traffic safety e) traffic operations f) pedestrian safety	N/A	N/A	N/A
	Moderate(-) slope failures will continue to occur	High(+) a retaining wall will stabilize the slope	Moderate(+) may not be effective in all areas
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
NATURAL 2. Vegetation impacts a) loss of trees 3. Wildlife Impacts a) loss of habitat	Low (-) slope instability will continue to topple shallow rooted trees and snap off some saplings	Moderate(-) construction of the retaining wall will result in the loss of trees immediately adjacent to the road	Low (+) some trees will have to be removed to permit the growth of new stabilizing flora
	Zero Wildlife habitat is not expected to be changed	Low(+) the loss of trees will promote low-lying vegetation and enhance wildlife habitat	Low(+) the loss of trees will promote low-lying vegetation and enhance wildlife habitat

TABLE 4: SLOPE STABILITY - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

ENVIRONMENT AND EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Structural Solution (retaining wall)	Non-structural Solution (stabilizing with deep-rooted vegetation, etc.)
SOCIO-ECONOMIC 4. Cost a) cost to construct b) cost to maintain	Low (-) Guide rail repairs and pavement restoration Moderate(-) The marginally stable slope will continue to affect pavement guide rail performance. Frequent maintenance is expected	Moderate(-) the retaining wall will be relatively costly to construct Low (+) the stable slope will lessen the frequency of maintenance along the north edge of the road	Low (-) the re-vegetation of the slope will be relatively inexpensive Low (+) the stabilized slope will lessen the frequency of maintenance along the north edge of the road
5. Property impacts a) disruption to property b) displacement of property c) flooding of property	Low (-) The guide rail is currently on private property in some locations Zero No full property takings is required N/A	Low (-) some additional property will be required to accomodate the wall Zero No full property takings is required N/A	Low (-) the guide rail is currently on private property Zero No full property takings is required N/A
6. Visual impact a) loss of the visual character of the road	Low (-) slope instability will cause some trees to topple, affecting the canopy over the road	Low (-) some trees will be lost or impacted during construction	Low (-) the canopy will be affected as trees are removed to promote stabilizing plant growth
CULTURAL 7. Built features a) disruption of built features b) displacement of built features	Moderate (-) sections of the Inglenwood wall are affected by slope instability Zero No displacement of built features is expected	Moderate (+) the Inglenwood wall will be stabilized Zero No displacement of built features is expected	Moderate (-) this solution will not stabilize the Inglenwood wall Zero No displacement of built features is expected
8. Roadway character a) disruption of roadway character	Low (-) slope instability will continue to topple trees and affect the canopy	Moderate (-) the tree canopy will be lost for sections of the road	Low (-) the tree canopy will be marginally affected by the removal of trees

TABLE 4: SLOPE STABILITY - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

ENVIRONMENT AND EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Structural Solution (retaining wall)	Non-structural Solution (stabilizing with deep-rooted vegetation, etc.)
GOVERNMENT POLICY 9. Niagara Escarpment Plan (NEP) a) conformity with the Plan objectives	N/A	Yes the NEP supports retaining walls for correcting surface erosion and slope failures	Yes the NEP supports stabilization techniques that minimize impacts on the Escarpment
10. Vision 2020 a) conformity with Hamilton Wentworth sustainable community objectives	Yes this solution addresses the natural environment	Yes this solution addresses the transportation environment and protects built heritage features	Yes this solution addresses the natural environment and transportation environments

TABLE 5: DRAINAGE - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

POTENTIAL SOLUTIONS				
ENVIRONMENT AND EVALUATION CRITERIA	Do Nothing	Storm Sewers	Improve Surface Drainage (ditches and infiltration)	
TRANSPORTATION 1. Roadway operation and safety a) roadway flooding b) long-term slope stability c) speeding d) traffic safety e) traffic operations f) pedestrian safety	o Zero flooding of the roadway would continue	Moderate(+) flooding of the roadway would only occur during severe storms Moderate(+) slope stability would be significantly improved N/A	Low (+) flooding of the road would be marginally improved Low (+) slope stability would be marginally improved N/A	
	Low (-) inadequate drainage would continue to aggravate slope stability N/A	Low (+) wet weather collisions would be reduced	Low (+) wet weather collisions would be reduced	
	N/A	N/A	N/A	
	N/A	N/A	N/A	
	N/A	N/A	N/A	
	N/A	N/A	N/A	
NATURAL 2. Vegetation impacts a) loss of trees 3. Wildlife Impacts a) loss of habitat	Low (-) runoff is contributing to slope instability which affects vegetation Zero no change in wildlife habitat is expected	Zero drainage concerns can be addressed within the existing disturbed area Zero no change in wildlife habitat is expected	Low (-) some tree removal may be required to accommodate the new facilities Low (+) removal of trees promotes low-lying vegetation and enhances wildlife habitat	

TABLE 5: DRAINAGE - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

ENVIRONMENT AND EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Storm Sewers	Improve Surface Drainage (ditches and infiltration)
SOCIO ECONOMIC 4. Cost a) cost to construct b) cost to maintain	Zero no construction costs Low (-) continued maintenance of the pavement and guide rail caused by slope problems	Moderate() construction of the sewers is relatively expensive Low (+) the maintenance costs of the storm sewer are more than offset by the decrease in maintenance of the pavement and guide rail	Low (-) construction of surface drainage features is relatively inexpensive Low (-) cleaning debris from the ditches and other maintenance work is expected
5 Property impacts a) disruption to property b) displacement of property	Zero surface erosion of the downhill slope is expected to continue Zero no full takings are required	Low (+) erosion of the downhill slope is expected to improve Zero no full takings are required	Low (+) erosion of the downhill slope will marginally improve Zero no full takings are required
c) flooding of property	Zero no change in the current condition is expected	Moderate(+) a significant reduction in runoff to the downhill properties is expected	Low (+) a marginal reduction in runoff to the downhill properties is expected
6 Visual impact a) loss of the visual character of the road	Low (-) inadequate drainage leading to slope instability will cause trees to topple	Zero no change to the visual character of the road is expected	Low (-) some trees may be lost during construction

TABLE 5: DRAINAGE - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

ENVIRONMENT AND EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Storm Sewers	Improve Surface Drainage (ditches and infiltration)
CULTURAL 7. Built features a) disruption of built features b) displacement of built features 8. Roadway character a) disruption of roadway character	Zero no changes in the built features are expected Zero no removal of built features is expected Low (-) inadequate drainage leading to surface erosion and slope failure will cause some trees to topple	Zero no changes in the built features are expected Zero no removal of built features is expected Zero no impact on roadway character is expected	Zero no changes in the built features are expected Zero no removal of built features is expected Low (-) some trees (and therefore canopy) may be lost
GOVERNMENT POLICY 9. Niagara Escarpment Plan (NEP) a) conformity with the Plan objectives 10. Vision 2020/Regional Transportation Review a) conformity with Hamilton Wentworth sustainable community objectives	N/A Yes this solution supports the socio-economic and cultural environments	Yes the NEP supports the use of storm sewers to reduce impacts on the Escarpment Yes this solution supports the transportation, natural, social and cultural environments	No ditches have a greater impact on the Escarpment than other means of dealing with roadway drainage issues Yes this solution supports the transportation, social and cultural environments

TABLE 6: PEDESTRIAN ACCESS/SAFETY - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

ENVIRONMENT AND EVALUATION CRITERIA	POTENTIAL SOLUTIONS			
	Do Nothing	Prohibit Pedestrians on James Mountain Road	Improve the Stairs and Associated Sidewalks	Pedestrian Walkway on James Mountain Road
TRANSPORTATION 1. Roadway operation and safety a) roadway flooding b) long-term slope stability c) speeding d) traffic safety e) traffic operations f) pedestrian safety	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A
	Zero there would be no change in pedestrian access/safety	Low (+) stranded motorists would still seek assistance	Zero those using James Mountain Road will continue to do so	Moderate (+) a designated pedestrian space improves access/safety
NATURAL 2. Vegetation impacts a) loss of trees 3. Wildlife Impacts a) loss of habitat	Zero no impact on trees	Zero no impact on trees	Zero no impact on trees	Moderate (-) trees adjacent to the road would be removed for a walkway
	Zero no impact on wildlife habitat is expected	Zero no impact on wildlife habitat is expected	Zero no impact on wildlife habitat is expected	Low (+) removal of trees will promote low-lying vegetation and enhance wildlife habitat

TABLE 6: PEDESTRIAN ACCESS/SAFETY - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

ENVIRONMENT AND EVALUATION CRITERIA	POTENTIAL SOLUTIONS			
	Do Nothing	Prohibit Pedestrians on James Mountain Road	Improve the Stairs and Associated Sidewalks	Pedestrian Walkway on James Mountain Road
<i>SOCIO-ECONOMIC</i>				
4. Cost				
a) cost to construct	Zero no construction is expected	Low (-) erection of signs is relatively inexpensive	Low (-) improvements are relatively inexpensive	Moderate(-) the construction of a walkway is moderately expensive
b) cost to maintain	Zero no additional maintenance is required	Zero no additional maintenance is required	Zero no practical change in maintenance costs are expected	Low (-) additional maintenance is required for the walkway
5. Property impacts				
a) disruption to property	Low (-) sections of the road are on private property now	Low (-) sections of the road are on private property now	Low (-) sections of the road are on private property now	Low (-) additional property for the walkway would be required
b) displacement of property	Zero no full property takings are required	Zero no full property takings are required	Zero no full property takings are required	Zero no full property takings are required
c) flooding of property	N/A	N/A	N/A	N/A
6. Visual impact				
a) loss of the visual character of the road	Zero no change in the visual character of the road	Zero no change in the visual character of the road	Zero no change in the visual character of the road	Moderate (-) the loss of trees adjacent to the road will remove some of the tree canopy

TABLE 6: PEDESTRIAN ACCESS/SAFETY - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

POTENTIAL SOLUTIONS					
ENVIRONMENT AND EVALUATION CRITERIA	Do Nothing	Prohibit Pedestrians on James Mountain Road	Improve the Stairs and Associated Sidewalks	Pedestrian Walkway on James Mountain Road	
CULTURAL 7. Built features a) disruption of built features b) displacement of built features 8. Roadway character a) disruption of roadway character	Zero built heritage features will not be disturbed	Zero built heritage features will not be disturbed	Zero built heritage features will not be disturbed	Low (-) the walkway may impact on heritage walls	
	Zero built heritage features will not be disrupted	Zero built heritage features will not be disrupted	Zero built heritage features will not be disrupted	Zero built heritage features will not be disrupted	
	Zero no change to the roadway character is expected	Zero no change to the roadway character is expected	Zero no change to the roadway character is expected	Moderate (-) the loss of trees adjacent to the road, and the wider road will impact on the roadway character	
GOVERNMENT POLICY 9. The Niagara Escarpment Plan a) conformity with the Plan objectives 10 Vision 2020/Regional Transportation Review a) conformity with Hamilton Wentworth sustainable community objectives	N/A	N/A	N/A	N/A	
	Yes this solution addresses the natural, socio-economic and cultural environments	Yes this solution addresses the natural, socio-economic and cultural environments	Yes this solution addresses the natural, socio-economic and cultural environments	Yes this solution addresses the transportation environment	

TABLE 7: TRAFFIC OPERATIONS/SAFETY - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

ENVIRONMENT AND EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Non-structural Solution (improved signs, police enforcement)	Structural Solution (refuge area, wider lanes, minor realignment, repair guide rail)
<i>TRANSPORTATION</i>			
1. Roadway operation and safety			
a) roadway flooding	N/A	N/A	N/A
b) long-term slope stability	N/A	N/A	N/A
c) speeding	Zero No change in travel speeds	Low (+) Enforcement will reduce speeds while the police are present	Low (-) Wider lanes may marginally increase speeds
d) traffic safety	Low (-) As volumes increase more accidents can be expected	Low (+) Improved signs and enforcement will marginally reduce accidents	Moderate (+) Wider lanes will reduce head-on and side swipe collisions, realignment will reduce single motor vehicle collisions, the refuge area will reduce rear-end type collisions
e) traffic operations	Low (-) As volumes increase breakdowns will occur more frequently and operations will degrade	Low (-) Operations are not expected to improve without substantive physical changes to the road	Moderate (+) wider lanes will increase mobility and the refuge area will reduce congestion caused by break downs
f) pedestrian safety	N/A	N/A	N/A
<i>NATURAL</i>			
2. Vegetation impacts			
a) loss of trees	Zero Maintaining the same road width and alignment will not impact any trees	Zero Maintaining the same road width and alignment will not impact any trees	Moderate (-) A wider road with some minor realignment will result in the loss of some trees
3. Wildlife Impacts			
a) loss of habitat	Zero Maintaining the same road width and alignment will not impact wildlife habitat	Zero Maintaining the same road width and alignment will not impact any habitat	Low (+) the loss of some trees will promote low lying vegetation and enhance wildlife habitat

TABLE 7: TRAFFIC OPERATIONS/SAFETY - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

ENVIRONMENT AND EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Non-structural Solution (improved signs, police enforcement)	Structural Solution (refuge area, wider lanes, minor realignment, repair guide rail)
SOCIO-ECONOMIC 4. Cost a) cost to construct b) cost to maintain 5. Property impacts a) disruption to property b) displacement of property c) flooding of property 6. Visual impact a) loss of the visual character of the road	Zero No construction work Low(-) frequent maintenance of the pavement and the guide rail Low (-) The road is currently on private property Zero No full property takings are required N/A Zero No change to the visual character is expected	Low (-) Revised signs and spot improvements will have minor construction costs Low(-) frequent maintenance of the pavement and guide rail Low (-) The road is currently on private property Zero No full property takings are required N/A Zero No change to the visual character is expected	Moderate (-) Reconstruction (excluding the cost of any slope stability measures and property acquisition costs) will have a moderate cost Low (+) the reconstructed road will require less frequent maintenance Low (-) additional property will be required to accomodate a properly designed road Zero No full property takings are required N/A Moderate (-) the reconstructed road will include some widening and tree loss

TABLE 7: TRAFFIC OPERATIONS/SAFETY - PLANNING SOLUTIONS AND ASSOCIATED IMPACTS

ENVIRONMENT AND EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Non-structural Solution (improved signs, police enforcement)	Structural Solution (refuge area, wider lanes, minor realignment, repair guide rail)
CULTURAL 7. Built features a) disruption of built features b) displacement of built features	Zero No disruption to built features is expected Zero No displacement of built features is expected Zero No changes to the road character are expected	Zero No disruption to built features is expected Zero No displacement of built features is expected Zero No changes to the road character are expected	Low (-) reconstruction may impact on heritage walls Zero No displacement of built features is expected Moderate (-) The road character is expected to have minor impacts
GOVERNMENT POLICY 9. Niagara Escarpment Plan (NEP) a) conformity with the Plan objectives 10. Vision 2020/Regional Transportation Review a) conformity with Hamilton Wentworth sustainable community objectives	N/A traffic operations are not addressed by the NEP Yes this solution addresses natural, cultural and socio-economic concerns	N/A traffic operations are not addressed by the NEP Yes this solution addresses natural, cultural and socio-economic concerns	N/A traffic operations are not addressed by the NEP Yes This solution balances the socio-economic, cultural, natural and transportation concerns

storm sewer alternative is carried forward because of its ability to reduce flooding and increase long term slope stability.

5.3.3 Pedestrian Access/Safety

Even with proper signs and policing, the 'prohibiting pedestrians' solution is not expected to be successful. The perceived hazard of staying in a disabled vehicle, that is located in the travelled way will likely cause the motorist to leave the vehicle and seek assistance. Area residents have indicated that motorists walk to their homes to phone for emergency service. Removal of the emergency phones will likely cause this to increase.

The 'improve the existing stairs' solution was rejected by most stakeholders. They expressed the concern with the existing stairs, that they are too isolated and lack adequate safety. Increased lighting would not make the stairs any less isolated. Moreover, the stairs would not provide the stranded motorist in need of emergency service proper access to a phone.

The impact analysis shows that the 'pedestrian walkway' solution produces consistently favourable results in the transportation category over the other alternatives. This solution also produces consistently unfavourable results in the remaining evaluation categories. However, the disadvantages produced by the 'pedestrian walkway' solution are not considered significant enough to warrant its dismissal. Therefore, since the pedestrian walkway option is the most effective solution to the problem it is carried into the design phase. *This decision will be revisited if the impacts revealed during the design phase are determined significant by the Project Team and other stakeholders.*

5.3.4 Traffic Operations/Safety

The impact analysis shows that the 'structural' solution produces consistently favourable results in the transportation and government policy categories

over the other alternatives. It is also the most effective way of dealing with the identified problem. Therefore, the structural solution is carried forward to the design phase.

The walkway identified in the preceeding section and the refuge area identified as part of the structural solution for the traffic operations/safety problem could be combined into one facility. This action would lessen overall impacts. *If significant negative impacts are predicted in the design phase the study team will re-evaluate the structural planning solution to this problem.*

5.4 The Preferred Solution

Based on input from stakeholders and the Project Team, the Region proposes the following solutions for each problem identified:

Slope Instability

- construction of retaining walls combined with the possible use of vegetative techniques at some locations.

Poor Drainage

- construction of storm sewers, including catchbasins, curbs and gutters.

Pedestrian Access and Safety

- construction of a refuge/walkway area for pedestrians and stranded motorists.

Traffic Operations/Safety

- reconstruction of the existing two lane road with consideration for some widening and realignment.

5.5 Stakeholder Input

Project Team representatives held a second Workshop April 12th, 1995 between 7:00 p.m. and

9:00 p.m. at the Central Public School Gymnasium, 119 Hunter Street West. The event was advertised in the Hamilton Mountain News on April 5th, 1995 and the Hamilton Spectator on April 5th and 8th, 1995. In addition, approximately 2000 brochures were mailed on March 20, 1995 to area residents and businesses. Individuals that previously expressed an interest in the project were also invited to the workshop.

Individuals attending the workshop were encouraged to sign the visitor registry. In total, 40 people signed-in.

The purpose of Workshop #2 was to provide the public an opportunity to review and comment on the solutions the Project Team proposed to take forward for design consideration.

The various comments workshop participants raised during the event and/or recorded on a comment sheet (see Appendix C) can be separated into the following categories:

Slope Stability

Six (6) of the seven (7) respondents agree with the statement: *slopes should be stabilized using vegetative and natural techniques. Structural techniques (i.e., walls or reinforced earth) should only be used where the natural techniques are ineffective.*

Individual respondents comment as follows:

- do not widen roadway
- this sounds like a motherhood statement. Is there something I'm missing?
- slopes are too weak now for anything to work, except reinforced walls, if heavy vehicles like buses and trucks are to be allowed on it, such as is the case now
- 40-50 years ago two people could walk up or down on a narrow shoulder that does not exist anymore due to erosion and slippage - right side going up
- on the north side build retaining walls

- some retaining walls are necessary on the south side
- maintain James Mountain Road as it is at present, upgrading it for...proper sloping

Comments voiced during the public meeting are:

- is it possible to cut down the road (lower elevation) to gain width?
- will vegetation stabilize the slope, especially in severe rain?
- can the study team address groundwater running into the road and this creates instability?
- is the road base unstable? Can only isolated areas be fixed?
- use existing base and repair sides most cost efficient?
- don't compare accidents on this road to other escarpment crossing. Do they have lower accident rates?
- is study/design in 1988 still available?
- what kind of deep-rooted vegetation will grow in rock?
- best way to stabilize with retaining wall

Drainage

All seven (7) respondents agree with the following statement: *Drainage along and across the road should be improved using storm sewers. Improved surface drainage should be considered, but does not appear to be feasible for most of the roadway.*

One respondent suggested gutters be placed in a third lane for emergency vehicles and pedestrians. Another respondent wanted James Mountain Road maintained as is and just upgraded with storm sewers.

Comments voiced during the public meeting include:

- need to fix storm sewers to Charlton
- make bottom area part of project
- is there enough downstream capacity in storm

- sewer?
- would falling rocks affect drainage?
- when a big storm, water, mud and rocks collect at bottom of hill. Can existing system handle? Doesn't handle it now and system backs up
- infiltration?
- clarification of impact on downslope vegetation
- how to engineer for major storms? 5-15 year storm?
- since the stairs were reconstructed, rain comes down the hill like a river. Rain does not go to storm sewers.
- include Inglewood/St. James
- must reconstruct sewers at bottom of hill to fix drainage problems from previous construction
- ensure have enough room for snow ploughs and snow removal

Pedestrian Access & Safety

Five (5) of the seven (7) respondents agreed with the statement: *Pedestrians walking along James Mountain Road should be provided with a suitable area to walk and improvements to the stairs should also be made, although through other City/Regional initiatives.*

Individual respondents who agree, offer the following comments and/or suggestions:

- very strongly support pedestrian access. I do not see any need to improve stairs. Sidewalks should probably be a "clip-on" as per Claremont Dr.
- essential to improve use by pedestrians and cyclists
- pedestrian area to be incorporated as part of third lane for emergency vehicles or bicycles. Pedestrians should be discouraged from using the road due to various dangers and risk of fatal accidents involving them directly and indirectly.
- the old Beckett Drive at top of John Street is still useable for pedestrians, cyclists, scooters (electric) etc. if some minor road work was done and lights installed. This would provide an alternative route to the top of the Claremont

hill or West 5th. It is now used by the Bruce Trail and Hikers.

- the current stairs could be altered to accommodate climbers:
 - a) 2 or 3 rest stations aside from the stairs to allow climbers easy access to the stairs
 - b) more lighting for safety and security
 - c) telephones for help
 - d) if feasible - an elevator for wheelchairs or scooters
- strongly endorse pedestrian walkway (cantilevered) north of roadway
- a walkway should be built on the outside of the north walls
- walkway is necessary for security reasons. Even at my age (70+) I can still walk the hill. I can't walk the steps. Someone pushing a bike or a child stroller could also navigate a walkway.

Two (2) of the seven (7) respondents disagreed with the statement: *pedestrians walking along James Mountain Road should be provided with a suitable area to walk.*

The following comments and/or suggestions list the reasons for disagreeing:

- dangerous for pedestrians
- an alternate route on John Street is available and should be upgraded
- preference is a vehicle only road (3 respondents)
- sidewalk is an unnecessary expenditure. I doubt that there would be an average of more than two or three pedestrians a day, if that. no doubt a sidewalk would increase the number but in view of the steepness of the hill the increase would be minimal. Also, it would not be worth the sacrifice of space needed for cars. I suggest that in order to accommodate the people or cyclists who would like to use the hill a trail through the woods would be less steep, less expensive and would help preserve the existing quaintness of the road.
- use stairs and better lighting for pedestrians, consider John Street Mountain path for pedestrians.

- existing bicycle access beginning at John Street and ending at the top of the stairs, they need improved grading and surfacing and ample lighting

Comments voiced during the public meeting include:

- contrary to NEC because of widening
- how many pedestrians use the road?
- don't want an increase in pedestrian traffic
- Vision 2020: not all of city to have pedestrian access
- too steep for pedestrians
- fiscal response important (stairs already exist)
- important to safely construct sidewalk for all & this is not possible here
- what are the ages of pedestrians using road/stairs?
- don't see many people using it, too expensive for too few
- road is poorly lit and seldom used by pedestrians
- no pedestrians on road - two other accesses
- want access on road for pedestrians
- use the stairs as well
- people can walk in a wide gutter
- road is too narrow for pedestrians
- lots of people from hospital walk down as well as Mohawk Street
- hundreds use the stairs
- not everybody drives a car; handicapped and people with strollers cannot use stairs
- road is unstable, must solve technical problems before solving pedestrian. issues
- use a shuttle bus as pilot project
- direct pedestrians to stairs
- too steep for strollers?

Traffic Operations & Roadway Safety

All seven (7) respondents unanimously agree with the statement: *James Mountain Road should be reconstructed as a two lane roadway along basically the same alignment. Non-structural improvements such as improved traffic signing should also be considered.*

Individual respondents commented as follows:

- do not widen roadway, keep present country look to the road
- agree, but a third lane incorporating a shoulder and drainage has to be added and emergency pull-off areas (2) for disabled vehicles and accidents and one emergency phone half way up -none now till past the top of Mountain
- if a person's vehicle becomes disabled on that hill they cannot back-up due to traffic, traffic flow is too heavy; provide emergency exits if you want to keep it two way; the road was never built for buses and trucks, far too narrow and the roadbed is breaking up; have police enforce the speed and careless driving for Herkimer Street up, or put up a sign " No Speed Limit: Travel at your own risk".
- small as possible
- make James Mountain Road one way up, which should solve most problems
- we would support the solution of making James Mountain Road one way upbound
- try to realign (slightly); the road should be rebuilt, and when it is it must be well-signed and painted (eg: upbound a sign to say "Keep Right", and perhaps a sign at the top saying "All Traffic Must Shift to Low Gear" (by not down shifting a very high rate of speed is attained).
- it would not make sense to make the road one way upbound only, the traffic mess would be a nightmare.
- making the road one way south would be out of the question since our driveways are on that road and we'd have to go up the mountain to get downtown
- upgrade for safety
- consider: review of one-way traffic on James minimally at the least cost "One Way Up James at All Times".

General Comments

- traffic flow is now at capacity on the road and the danger level to both pedestrians and

vehicles. The grade on the road is the steepest of any of the heavily travelled Mountain access roads, resulting in unsafe conditions when wet or snow-covered and should put a limit on the size of vehicles using it.

- as I drive down it appears that the city must buy the last house on the right (downbound). It would certainly help the planners in the road alignment and it would also be a safety feature.
- a greater need than a sidewalk is provision for the number of stalled cars at the spot where the road turns and becomes the steepest. Almost everyday I see cars stalled there, especially in the winter. Requested phone in location of most stalled cars (currently at Aberdeen and James) as many people knock on their door to borrow phone. A sign could rectify this, but some kind of lay-by should be provided farther up the hill than at Aberdeen.
- wrong way traffic is common (Inglewood and Aberdeen)
- speed and frequency of accidents are greater from down traffic
- eliminate buses, they make too much noise
- should have a loud speaking system at the next meeting with a microphone for the audience as well. It was very difficult to hear at the back of the room.

CHAPTER 6

Design Alternatives

6.0 DESIGN ALTERNATIVES

Roadway design consists of cross-section design and alignment design. Elements of a typical cross-section include: lanes, curbs and gutters, sidewalks, boulevards, guide rails, and their respective widths. Roadway alignment refers to the horizontal and vertical path the roadway follows.

There are three elements to consider in the design and operation of a roadway: the road, the driver and the vehicle. A failure of one or more of these elements of the road system typically results in congestion/delay or a collision. Vehicles and drivers are regulated by the Federal and Provincial governments. The large variation in drivers' abilities, vehicle dimensions and performance characteristics are overcome by establishing design parameters for typical drivers and vehicle types. In turn, typical drivers and design vehicles are factored in to the design of the roadway (the one aspect the Region has control over).

6.1 THE ROADWAY DESIGN PROCESS AND DESIGN STANDARDS

6.1.1 Design Speed

Roadway design follows a process that is intended to allow drivers to travel safely at a given speed. A 'design speed' is first selected for the roadway and then all of the elements of the roadway are related to that speed to provide a consistent and expected roadway.

In order to maintain an acceptable level of safety, roadways must be designed to accommodate drivers travelling at a comfortable speed. Factors that contribute to a comfortable driving speed include: roadway design, vehicle type, climate conditions, traffic conditions, and driver ability. As previously indicated, roadway design is the only factor regional government exercises control

over. Therefore, the roadway is designed for a speed at which 95% of the traffic is travelling at or below. It is generally uneconomical to design for the typically unreasonable remaining 5% of the population. The 95th percentile speed is generally used as the 'design speed'.

Drivers travel at a speed that is comfortable for the prevailing weather and traffic conditions, the adjacent land use and topography, and the physical features of the road. The design speed adopted should be logical with respect to the topography, adjacent land use, and type of road. Furthermore, a roadway should have a consistent design speed for its entire length. Elements of the road that have significantly lower design speeds than adjacent elements often confuse drivers which may then result in accidents. This last point is exemplified by the curve at the top of James Mountain Road. Drivers descending the escarpment travel on West 5th Street, which has a design speed of 60 km/h, and enter the curve at the top of the escarpment, which has a design speed of 30 km/h. The sudden reduction in design speed is unexpected and a major contributor to the collisions occurring annually.

Changes in terrain and other physical controls may dictate a change in design speed on certain sections of roadway. If this is the case, the introduction of the lower design speed should not be effected abruptly, but should occur over a sufficient distance to permit a gradual reduction in operating speed. Where it is necessary to introduce the reduction in design speed rather abruptly, the driver must be warned of the reduction through appropriately posted signs.

The above discussion, regarding deviations from the design standards is also acceptable in instances where non-engineering considerations may take a more important role. In order to make any such deviations, the roadway designer must have a clear understanding of the standard and its implications for safety.

6.1.2 Driver Expectation and Positive Guidance

Roadway designs must incorporate the concepts of 'driver expectation' and 'positive guidance'. If a particular feature of a roadway or its surroundings is a causal factor in a collision, it is usually because it violates the driver's expectations. When travelling on a roadway, drivers quickly form notions about an acceptable travel speed and other vehicle control actions based on the features of the road, the amount and type of traffic, and the surrounding land use and topography. This is partly because of the 'standard' method in which roads are designed. A violation of these driver expectations, (e.g., a sharp curve on a high speed roadway), ultimately results in accidents.

That is not to say that designers cannot deviate from design standards. It simply means that when a standard is not met, or when a violation of expectancy is anticipated, the designer must ensure some other form of positive guidance is provided. Positive guidance is the provision of information to the driver, when the driver requires it and in a form that is readily understood, in order to avoid a collision. In the instance of the sharp curve, a curve warning sign with an appropriate advisory speed posted in advance of the curve, would convey to the driver the need to slow down to an acceptable speed in order to traverse the curve. In general though, the subliminal information conveyed to the user by the built roadway will overwhelm any information conveyed by signs and signals. Good signs do not fix bad designs, and construction of substandard roadway elements should be avoided.

6.1.3 The Forgiving Roadway

A common practice in the design of higher order roadways (i.e., arterials and freeways) is the application of the principles of the forgiving roadway. The concept is to design the roadway so

that minor errors in judgement on behalf of the driver do not result in a collision. For instance, the potential for a collision caused by a minor error in steering (that results in crossing the centreline) can be minimized by providing wider lanes. In addition, the probability of striking a roadside obstacle can be minimized by providing a clear zone beside the road. However, the forgiving roadway will generally result in a wider roadway. This principle must be applied judiciously on a road that traverses an Environmental Significant Area, such as James Mountain Road.

6.2 ROADWAY SAFETY

A large portion of the design of roadways centres upon the provision of a 'safe' facility. In this section, types of safety are defined and discussed in order to place ensuing discussions in perspective.

Substantive Safety

If a particular roadway, or portion of roadway, is experiencing a significant number of collisions or a high collision rate, then it is substantively unsafe. This refers only to collisions that are documented, usually in the form of a collision reported to and investigated by the Hamilton-Wentworth Regional Police.

Nominal Safety

Roadways are designed to certain standards and guidelines that are based on a sound understanding of safety and the effects of roadway design on safety. In the circumstance where a roadway or one of its elements does not meet or exceed a standard or guideline but has not resulted in accidents, it may be considered nominally unsafe. In other words, something that is nominal unsafe is an under-designed roadway element that has not precipitated accidents but can be expected to do so if the roadway is not reconstructed to meet or exceed the standards. Nominally unsafe conditions are usually referred to as hazardous conditions or

hazardous roadway elements. It is important to note that accidents are not the only indicator of safety.

Perceived Safety

Regardless of the actual collision record or adherence to standards of roadway design, the public will have a level of personal security in using a roadway. This is called perceived safety. Perceived safety does not necessarily have any relation to substantive or nominal safety.

6.3 THE DESIGN SPEED OF JAMES MOUNTAIN ROAD

When considering the design speed of James Mountain Road, one must remember that James Street, James Mountain Road and West 5th Street, although different in name, actually form one continuous street. Therefore, the design speed of James Mountain Road is not independent of the design speeds of James and West 5th Streets. Both James Street and West 5th Street are relatively flat and straight roads with design speeds of 60 km/h (the typical design speed for urban Regional Roads). While this speed is seldom attained during peak periods of travel, it is attained during times of low and moderate traffic volumes.

Because the design speed of James and West 5th Streets are 60 km/h, this has to be taken into account in the design of James Mountain Road. Spot speed studies conducted along the roadway have confirmed that the 95th percentile speed of James Mountain Road is 60 km/h. Therefore, 60 km/h has been selected as the design speed.

6.4 CROSS-SECTION DESIGN

The basic elements of the cross-section have been determined by the preferred planning solution. These elements include two travelled lanes, curbs

and gutters to accommodate drainage, a sidewalk or sidewalks for pedestrian access and safety, refuge area for disabled vehicles, and a retaining wall for slope stability. Another element of the cross-section that is required for safety reasons, and presently exists, is a guide rail adjacent to the upbound lane. The guide rail is to protect the out-of-control driver from plunging over the escarpment face. Since the basic elements of the cross-section have been dictated by the planning solution, the remaining cross-section design tasks are to determine if other elements need to be included and to select the type and dimensions of each element.

The next section details the typical urban arterial cross-section for the Region of Hamilton Wentworth. Following that, each element of the cross-section and its suitability for James Mountain Road is discussed. The resulting elements and dimensions form the recommended cross-section for James Mountain Road.

6.4.1 The Regional Standard for Arterial Cross-section

Arterial roadways that carry moderate to high volumes of traffic are usually constructed to a very high design standard to provide both mobility and safety. The number of traffic lanes that carry through traffic (as opposed to turning traffic) is generally governed by the volume of traffic and the desired level of service. Consideration is also given to non-engineering factors such as the natural and socio-economic environments.

A typical cross section for an urban arterial roadway in the Region of Hamilton Wentworth is described below.

Undivided urban regional/arterial roads have lane widths predicated on the design speed and the volume of traffic. Urban regional roadways that carry two-way traffic, typically have 3 or more

travel lanes and are ideally designed with 3.75 metre lanes. There are very few instances where a regional road with two-way traffic, in an urban setting has only 2 lanes. This is generally because regional roads carry a relatively high volume of traffic and are intended to provide mobility. Because Regional roads are intended to provide mobility, and because James Mountain Road has a steep grade (approximately 11%), it would be the Region's preference to construct the travelled lanes with a total pavement width of 8.5 metres. This dimension permits 2 - 3.0 metre unmarked lanes of traffic to be maintained while 2.5 metres of the unmarked pavement is occupied by a disabled vehicle. The 3.0 metre lane widths are permissible under breakdown conditions because the blockage (i.e., the disabled vehicle) is a temporary condition. Furthermore, the disabled vehicle narrows the road and will typically cause a driver to be more cautious (i.e., travel at a lower speed). If the road is split in half by a centreline, the lane widths would be 4.25 metres each.

Drainage of roadways is achieved through the provision of ditches or storm sewers, curbs and gutters. Urban roadways are usually constructed with curbs and gutters to minimize the amount of property required for drainage facilities.

Outside of the curbs, arterial roadways in the Region are ideally provided with a boulevard and a sidewalk on both sides of the roadway. Boulevard widths vary depending on the amount of available property, but are ideally 1.5 to 3.0 metres wide. Sidewalks are typically 1.5 to 2.0 metres wide. Also, there is usually a 1.0 metre area between the outside of the sidewalk and the property line to accommodate utilities.

6.4.2 James Mountain Road Cross-Section

Three principles seem to best reflect the concerns stakeholders raised through the involvement program:

- only fix what is necessary;
- keep the road as narrow as possible; and
- maintain the existing curvature of the roadway.

The aforementioned principles specifically address stakeholder's concerns for the roadway's visual character, heritage value, and other environmental values. The following sections explain how the Project Team established a cross-section that balanced these principles with the safety concerns previously mentioned.

Lane Widths

Lane widths are selected with consideration for the collision record, the speed of traffic using the roadway, traffic volume, type of traffic (existing and future) and the edge of pavement support (i.e., curbs and gutters versus shoulders and ditches). An appropriate lane width on an arterial road must provide safety and mobility.

The collision record documented in Chapter 3 indicates that there is a significant number of "head on" and "side swipe" collisions that could be attributed to narrow lanes. The majority of these collisions are occurring at the relatively sharp curve found at the top of the escarpment (see Figure 5).

Elsewhere there are approximately 2 collisions per year along the essentially straight portion of the road that may be alleviated by an increase in lane width. However, given that these accidents are essentially random occurrences and that this road carries a relatively high volume of traffic, it is unlikely that an increase in lane width along this straight area would significantly reduce the accident frequency. This is not a substantive safety problem.

The accident history of a roadway is only one indicator of traffic safety. In terms of lane width, safety is reflected in the design by the potential for

a collision caused by motorists wandering outside of their lane. The likelihood of a vehicle wandering outside of the lane is based on the speed of traffic, the width of the vehicle and the vehicles' typical position within the lane. Minor adjustments in steering will cause a greater variation in lateral position at higher speeds. Hence, the higher the operating speed the greater the potential for a vehicle to wander outside of the lane. Furthermore, if the typical position of the vehicle is close to the centreline of the road then it will cross the centreline more frequently than if it's usual position is close to the edge of the road. The usual position of vehicles on curbed roads are closer to the centreline than on roads with shoulders because the curb is a barrier that drivers tend to shy away from. The design standards, which provide nominal safety, prescribe a minimum 3.5 metre wide lane.

The Hamilton Street Railway operates buses, and will continue to operate buses, on this roadway. The width of these buses is the maximum permissible under the Highway Traffic Act of Ontario, i.e., 2.6 metres exclusive of the rear-view mirrors. In order for these vehicles to operate with an acceptable level of safety a minimum lane width of 3.5 metres is required.

Given the public's desire to maintain a narrow roadway platform and the profession's guideline of a 3.5 metre minimum lane width, it is recommended that the proposed lane width for James Mountain Road be reduced from the Regional standard of 4.25 metres to 3.5 metres. This decrease in lane width effects only a small length of the road. In areas where the lanes are actually wider then 3.5 metres currently, the existing lane widths may be maintained (i.e., in the urbanized areas at the top and bottom of the escarpment).

Curb and Gutter

The principle function of curbs and gutters is to

control drainage from the roadway. They serve a secondary function of delineating the travelled way from the untravelled area of the road and in the case of a barrier curb inhibit or discourage vehicles from leaving the travelled way.

In urban areas curbs and gutters with appropriately spaced catchbasins limit the amount of property required for drainage. Ditches, if they are constructed to an adequate depth and have sides that can be maintained (i.e., sodded and mowed), require more space than curbs and gutters. The Regional standard for curb and gutter is to provide a barrier curb and gutter on both sides of the roadway. Typical widths for curb and gutter in normal conditions range from 0.5 to 0.8 metres.

In the instance of James Mountain Road, curbs and gutters must be provided on both sides of the road to control drainage. However, the curb on the north side of the road, should be mountable instead of a barrier type. The reason being that the mountable curb allows a motorist who has broken down to pull his vehicle partially on to the refuge/walkway area (see Section 6.2.3) so that two-direction traffic can be maintained. Widths of the proposed curb and gutter are not expected to exceed the above mentioned standard dimensions.

Barrier curbs, because they can discourage vehicles from leaving the travelled way, are a consideration in the selection and placement of guide rails. Therefore, additional discussion with respect to the proposed curbs for James Mountain Road can be found in the section on *Guide Rail*.

Boulevards

A boulevard is the area between the curb and the sidewalk. It functions as a safety separation between vehicles and pedestrians, an area for utilities and traffic signs, and an area for snow storage. The standard width of a boulevard on an arterial roadway is 3.0 metres. However, in areas

where property is limited this dimension can be reduced or the boulevard eliminated subject to appropriate justification.

On James Mountain Road boulevards are not required on either side of the road. On the uphill side a walkway has not been provided so a safety separation is not required. On the downhill side the walkway is also serving as part of the refuge area and therefore a boulevard is not provided. With respect to utilities and snow storage, all utilities are overhead and do not require a continuous boulevard, and winter maintenance personnel have agreed that a change in snow clearing procedures can be made to eliminate the need for an uphill or downhill snow storage area.

Guide Rail

The majority of vehicles that leave the roadway will generally come to a stop within a specific distance of the edge of the travelled lane. The exact distance for each road is a function of operating speed, the presence of a barrier curb or shoulder, the slope of the roadside, etc. The area that is traversed by these vehicles should be kept clear of obstacles and hazards. This area is called the roadside clear zone. If a hazard is located within the clear zone, then it is a candidate location for a guide rail.

A guide rail is a barrier system placed at the side of the road to protect the driver from a hazard. The guide rail itself is considered a hazard, since damage is usually incurred by a vehicle that strikes one. Therefore, guide rails should be used only to protect the motorist from a greater hazard. In this instance, the greater hazard is the precipice of the Niagara Escarpment. A guide rail is installed to protect out-of-control drivers from plunging off of the escarpment.

Guide rails are designed to deform or break on impact so that a vehicle is not suddenly halted.

Therefore, guide rails are grouped into three categories by the maximum amount of deformation/ deflection allowed: flexible, semi-rigid and rigid. The desire to maintain a narrow platform has resulted in the guide rail being placed on or within 0.5 metres of the proposed retaining wall. Therefore, permissible guide rail deflections should not exceed a maximum of 0.5 metres. Any more deflection would dramatically increase the chance of a wheel dropping over the retaining wall/slope resulting in the vehicle vaulting or turning over. The two types of guide rails that meet this requirement for low deflection are the steel beam guardrail (as exists) and the concrete barrier. The footprint of a typical guide rail of these types ranges from 0.5 to 1.0 metre.

Because guide rails are themselves hazards, it is preferable not to place them immediately beside the travel lanes. The closer a guide rail is to the travel lane the greater the probability of an accident (i.e., the guide rail being struck). However, the distance that a guide rail is placed from the edge of the travelled road is also dependent on the type of guide rail and the presence and type of curb.

Approved concrete barriers are designed to function independently of curbs. Therefore, concrete barriers should not be used adjacent to any type of curb. This being the case it is desirable to locate the concrete barrier as far as possible from the edge of the travelled way, so as to minimize the number of impacts and reduce maintenance costs.

Steel beam barriers can be designed to function in conjunction with or independently of a curb. Steel beam barriers placed adjacent to a mountable or semi-mountable curbs (as is the case with James Mountain Road) could be placed from 0.25 metres to approximately 3.0 metres (the width of the clear zone) beyond the outside edge or face of the curb. On James Mountain Road, the distance that a barrier should be placed behind the mountable curb is 1.5 metres (i.e., the width of the refuge/walkway area). One and a half metres is

selected as the recommended offset because lesser offsets would reduce or eliminate the refuge/walkway area, and greater offsets would cause increased impacts to the natural environment and the visual character of the road.

The guide rail is a necessary element of the roadway from a safety point-of-view and will occupy approximately 0.5 metres of the roadway.

Retaining Wall

A retaining wall is a method of stabilizing a slope. Leaning guide rails and pavement cracks on the downhill side of James Mountain Road are a clear indication that the slope is moving. The Niagara Escarpment Commission has indicated that they prefer to use retaining walls to stabilize slopes because they do less damage to the surrounding areas. There is no standard width for retaining walls since its width depends on subsoil conditions, height, surface loading, etc. However, the Region will endeavour to construct the retaining wall integral with the guide rail so that no extra space is required.

The proposed cross section is wider than the existing in some areas. Therefore, depending on the side of the road on which the widening is realized, a second retaining wall may be required. This will be discussed in detail in Section 6 - Alignment.

Refuge/Walkway Area

The Region's standard arterial cross-section allows enough space in the travel lanes to accommodate a disabled vehicle and maintain two directions of traffic. It also provides a separate space outside of the travelled way for pedestrians. In the instance of James Mountain Road, both refuge and walkway areas are desired from a safety perspective. As well, the refuge area is needed to maintain two way

traffic flow in the event that an upbound vehicle becomes disabled. Given the existing frequency of this event (i.e., 3 to 5 time per week) and the higher future demands that will be placed on this arterial access by transit and lighter vehicle use, every reasonable effort must be made at this time to protect the future operation of this roadway.

The Project Team recognizes that the provision of separate refuge and walkway areas increases the cost of the roadway and corresponding environmental impacts. In an effort to balance environmental concerns with roadway safety/operation needs, the refuge and walkway areas are combined.

As indicated in Chapter 3, Vision 2020 considers walking as a high order mode of transportation. The provision of a sidewalk is keeping with this policy direction. Also, it provides a 'walking' facility for those who may not be able to, or choose not to, use the nearby stairs.

Given that there are no quantitative warrants for the provision of a walkway on James Mountain Road, there is a qualitative concern at hand. The standard for arterial roads warrants a sidewalk to be provided on at least one side of the road unless vehicular *and* pedestrian traffic are 'light'. In the instance of James Mountain Road, pedestrian volumes are light, but vehicular volumes are moderate to heavy and expected to stay the same or rise over the next twenty years (see Chapter 3). The concern the Project Team shares with some members of the public is over the mixing of pedestrians and moderate to high volumes of vehicles within a narrow roadway. Therefore, the road is nominally unsafe for pedestrians in its present condition.

The lack of a walkway/refuge area on James Mountain Road is a hazardous condition. Pedestrians using this roadway must share the same narrow road space as vehicles. This condition can reasonably be expected to lead to a severe

pedestrian/vehicle collision because drivers do not expect to find pedestrians in the travelled way.

The third type of safety that must count in the design of roadways is that of perceived safety or security. The public's perception of safety does not necessarily have any relationship to either accidents (substantive safety) or good design practice (nominal safety). In this instance, there is a dichotomy of opinions on public safety. One segment of the public does not feel secure walking on the stairs but would feel secure walking on a walkway along the roadway. This perception has little to do with traffic related safety. Rather it is a perception based on the feeling of isolation and susceptibility to crime. Another segment of the public perceives the roadway to be safe as it exists because there are few pedestrians using the roadway, so the probability of an accident is outweighed by cost and environmental considerations. Moreover, some of these people assert that the walkway, as proposed, is too close to the fast moving traffic and would not provide a significant increase in safety (i.e., security from crime is offset by the exposure to a traffic-related accident). There was a minority of people who stated that the road was unsafe for pedestrians, but they would walk along the road if a walkway is provided.

Given the desire to maintain a narrow roadway only one walkway/refuge area is proposed. Furthermore, the walkway/refuge area is located on the north side of the road for the following reasons:

- it is a natural continuation of the existing sidewalk on the north side of James Street at Inglewood;
- vehicles are travelling slower going uphill therefore, pedestrians would feel more secure on the north side of the road;
- breakdowns typically involve vehicles

ascending the escarpment so stranded motorists have direct access to the walkway without having to cross the road; and

- the walkway, which doubles as a refuge area, is adjacent to the upbound lane and most stranded motorists will likely walk downhill to the phone they have passed which is located on the north side of the road.

The minimum width for the refuge/walkway area is 1.5 metres. This is enough space for vehicles to pull partially off the travel lane and still allow other vehicles to travel in two directions.

On James Mountain Road, vehicle breakdowns occur approximately 3 to 5 times per week. Pedestrians walk this roadway about 10 times per day. Given these numbers it is reasonably safe for the refuge area and the walkway to be combined. It is important to note that the refuge/walkway will be separated from the travel lanes by a semi-mountable curb. The refuge/walkway is not intended to carry moving traffic.

In order for the refuge area to act as desired, the total roadway platform (pavement) width must be 8.5 metres (i.e., two 3.5 metre lanes and the 1.5 metre required for the walkway).

Need for the refuge/walkway remained the most contentious issue throughout the consultation process.

6.5 THE PREFERRED CROSS SECTION

Based on the previous discussions the preferred cross section is shown in Figure 8. It is worthy to note that this is the only cross section that the Project Team felt addressed the public's desire for a roadway that was both narrow and safe. Consequently, it was the only cross-section presented to the public. The total width of the cross-section is 10.5 metres. Through the natural

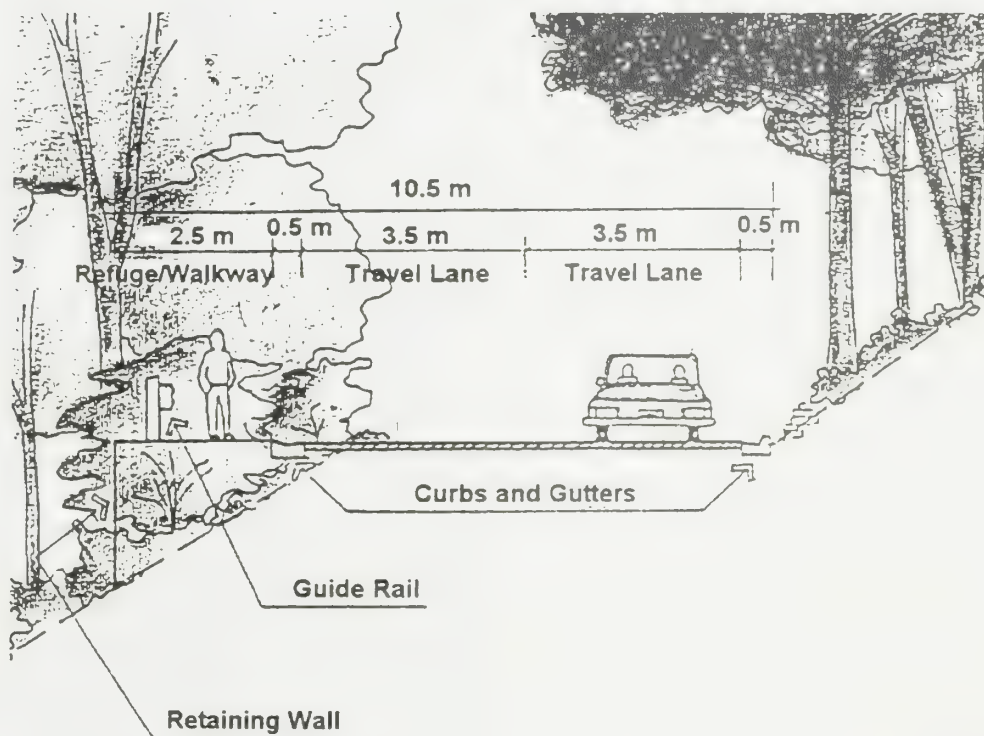


FIGURE 8
PREFERRED CROSS SECTION

area this represented an increase in cross-section width from approximately 0 metres to 4 metres.

6.6 REALIGNMENT ALTERNATIVES

Once the preferred cross-section is established, the process of identifying and evaluating alternative alignments is undertaken. This process begins with the identification of study area constraints (i.e., features the realignment must avoid or accommodate).

6.6.1 Constraints

Constraints that affect the generation of reasonable realignment alternatives for James Mountain Road are:

- the bridge piers of the Claremont overpass (very expensive to relocate);
- the crenellated wall on the north side of James Mountain Road west of Inglewood Drive (an important heritage feature);
- maintaining or improving driveway access to the James Mountain Road residences; and
- matching the elevations of the intersecting roadways, including James and West 5th Streets at the study limits (design requirement).

Figure 9 illustrates the location of these constraints.

Given the short length of roadway and the aforementioned constraints, there is very little flexibility in the realignment options.

The section of road from Gateview Drive to the Claremont bridge includes a relatively sharp curve located at the brow of the escarpment. This curve traverses a relatively developed area and has the potential for realignment without impacting significantly on the roadway character or the natural environment. The collision record indicates that the majority of the collisions

occurring on this road, are happening on this curve. Therefore, collision countermeasures, including a flattening of the curve are required. An increase in the radius of the curve by moving the roadway to the west will not damage any significant features of the road and will greatly increase safety.

The section of road from the Claremont bridge to Inglewood Drive traverses the escarpment natural area in a relatively straight line. This section of roadway does not have an abnormal collision history. However, as previously indicated, the roadway cross-section through this area must be widened to secure future pedestrian/motorist safety and traffic operations. Hence, an analysis of the impacts associated with realigning a widened roadway cross-section is required.

6.6.2 Generation of Widening Alternatives

As a starting point for evaluation and analysis, alternatives are examined from two perspectives; widening all on the uphill (Alternative 1) or all on the downhill (Alternative 2) side of James Mountain Road (see Figure 10). The uphill alternative attempts to minimize the length of retaining wall needed to correct the existing slope failure on the downhill side. The downhill alternative avoids constructing a retaining wall on the uphill side of James Mountain Road.

A third alternative was later considered but subsequently dropped because it impacted the environment on both sides of James Mountain Road. In this case a retaining wall would be needed on both sides of the road which would further compound rather than minimize impacts.

6.6.3 Analysis and Evaluation of Alternative Widening Alignments

Based on input from all stakeholders and the

Project Team a set of evaluation criteria was developed to assess the impacts the alternatives would generate. The evaluation criteria and impact analysis are shown in Table 8.

The evaluation of uphill (Alternative 1) versus downhill (Alternative 2) widening alignments show that all criteria, except private property, favours the downhill widening. The reason is the relative importance of the uphill landform and the fact that a retaining wall would be needed on both the uphill and downhill sides of James Mountain Road if an uphill widening is selected.

6.6.4 Trade-offs

In terms of trade-offs, the selection of the downhill alignment versus the uphill alignment means that private property impacts are not considered as significant as impacts to the visual character of James Mountain Road, vegetation, cultural landscape, ESA integrity, construction cost and conformity with government policy. All other evaluation criteria maintain essentially the same impacts and therefore do not play a relevant role in the widening decision (i.e., maintenance cost, business impacts, noise impact, safe access to/from driveways, roadway safety, speed of traffic, wildlife impacts, and impacts on cultural features).

To mitigate/compensate private property impacts, land owners would receive fair market value for the land required, have input into landscaping decisions made during detail design, and have input in the selection of suitable facing material needed to construct the retaining wall (i.e., to reduce visual intrusion).

Rear yard property depths along this area range from 30 metres to 110 metres. The maximum width of property required in the downhill widening alternative is 5.2 metres. Impacted property in this area is located on a 45° slope.

Impacts associated with an uphill alignment are

greater and can not be mitigated to the same extent as those associated with the downhill alignment. As previously indicated, if the uphill widening is constructed, a second wall is required on the uphill side of the road to accommodate the widening. Both the heritage consultant and the landscape architect indicated that a wall on the uphill side would further damage the cultural landscape and the visual character of the roadway.

Stakeholders that attended the third Public Information Centre (PIC) and public meeting were asked to weight the importance of each evaluation criterion. The results indicate that the decision relevant criteria previously listed (i.e., property, visual impacts, etc.) are all considered equally important (i.e., moderate to high). This information neither confirms nor rejects the downhill widening alternative.

6.6.5 The Recommended Widening Alternative Versus Do Nothing

Based on the evaluation of the uphill versus downhill widening the recommended alternative is a downhill widening with a flattening of the curve at the brow of the escarpment (see Figure 11). The the benefits of widening the roadway cross-section on the downhill side of James Mountain Road and the net impacts that accompany this conclusion, are not so significant to warrant doing nothing.

This recommendation was taken forward for stakeholder review and comment.

6.7 STAKEHOLDER INPUT

The following describes the stakeholder input received after the selection of a recommended widening alternative. Concerns and issues raised during this period led to the preferred widening alternative described in Chapter 7.

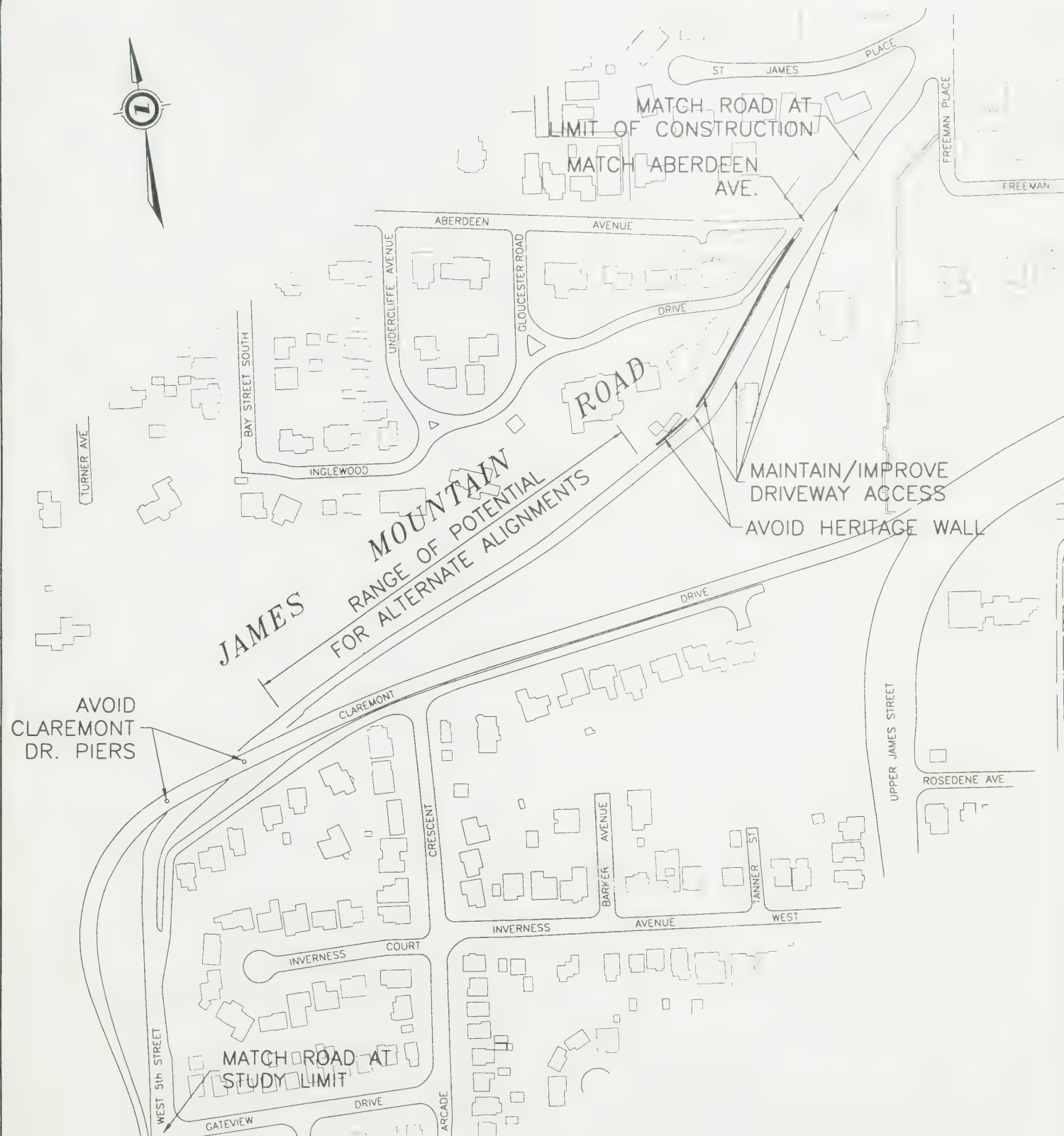


FIGURE 9
ROADWAY ALIGNMENT
DESIGN CONSTRAINTS

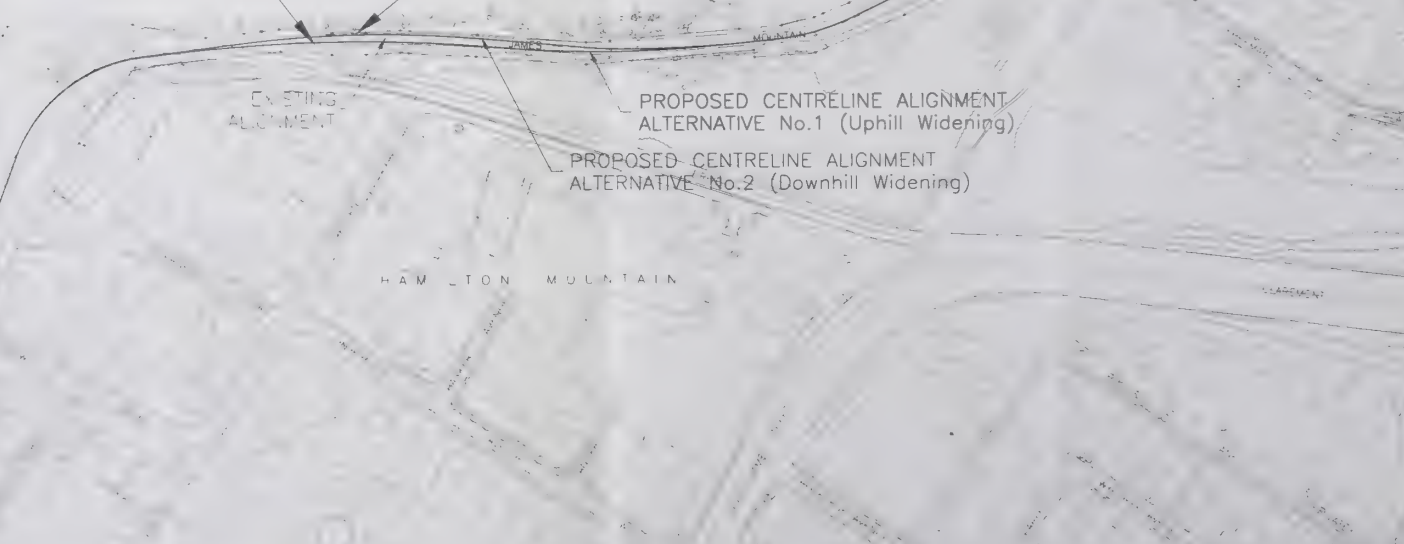
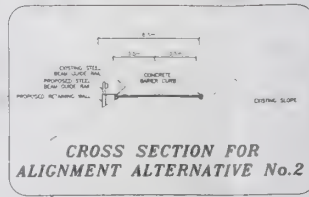
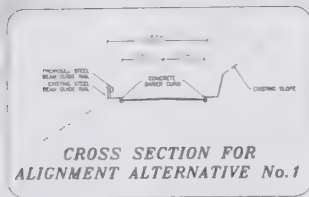


FIGURE 10
ROADWAY ALIGNMENT DESIGN ALTERNATIVES

TABLE 8: EVALUATION OF ROADWAY DESIGN ALTERNATIVES

ECONOMIC ENVIRONMENT					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <u>Cost</u>					
a) Construction	<ul style="list-style-type: none"> dollar amount required to design and construct retaining walls, roadway and mitigation measures (e.g., landscaping, period lighting, etc.) 	Construction costs will differ depending on the alternative roadway realignment design selected.	<ul style="list-style-type: none"> estimated costs based on Regional projects 	<ul style="list-style-type: none"> \$2.0 million 	<ul style="list-style-type: none"> \$1.75 million
b) Maintenance	<ul style="list-style-type: none"> dollar amount required to maintain roadway (in addition to maintenance activities already assumed) 	Additional maintenance costs represent a long term debt to the Region.	<ul style="list-style-type: none"> actual costs based on ongoing maintenance activities 	<ul style="list-style-type: none"> \$5,120.00 	<ul style="list-style-type: none"> \$5,120.00
c) Property	<ul style="list-style-type: none"> dollar amount required to purchase private property 	Property acquisition costs will differ depending on the alternative roadway realignment design selected.	<ul style="list-style-type: none"> assessment mapping property assessor legal surveys 	<ul style="list-style-type: none"> \$250.00 (based on \$6,000.00/acre) 	<ul style="list-style-type: none"> \$1,100.00 (based on \$6,000.00/acre)
2. <u>Business Impact</u>	<ul style="list-style-type: none"> number and type of businesses impacted and the nature of the disruption (i.e., type and duration of impact) 	Business activity can be impacted either through loss of property (long term impact) or construction activity (short term impact). The objective is to minimize both the long term and short term impacts, and to recognize the critical periods (months) for business activity adjacent to the road.	<ul style="list-style-type: none"> assessment mapping field visit discussion with area businesses 	<ul style="list-style-type: none"> one retail outlet (Scout House) impacted during construction access maintained throughout construction inconvenience for 5 months 	<ul style="list-style-type: none"> one retail outlet (Scout House) impacted during construction access maintained throughout construction inconvenience for 5 months

EVALUATION OF ROADWAY ALIGNMENT DESIGN ALTERNATIVES

SOCIAL ENVIRONMENT					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <u>Visual Impact</u>	<ul style="list-style-type: none"> degree to which vegetation removal, slope displacement, and roadway reconstruction (i.e., roadway realignment, laneway widths, guard rails, lighting, and signage) will change the visual character of the James Mountain Road landscape 	<p>The James Mountain Road Escarpment corridor has been identified as having a special character and provides a unique visual experience.</p> <p>Changes to the existing roadway curvature, with the displacement of vegetative slopes and the introduction of features into the roadscape, can have adverse effects to the visual resource of James Mountain Road.</p> <p>The intent is to minimize the visual impacts to this roadway corridor.</p>	<ul style="list-style-type: none"> study area field work by a landscape architect photo inventory 	<ul style="list-style-type: none"> moderate to high impact significant change to the visual character with limited opportunity for mitigation 	<ul style="list-style-type: none"> moderate impact significant change to the visual character with some opportunity for mitigation
2. <u>Private Property Impact</u>	<ul style="list-style-type: none"> area of private property required for construction 	<p>The enjoyment of one's property is partially related to the amount of useable space the resident owns</p>	<ul style="list-style-type: none"> assessment mapping study area/field trip topographic mapping 	<ul style="list-style-type: none"> 150 square metres 	<ul style="list-style-type: none"> 750 square metres
3. <u>Noise Impact</u>	<ul style="list-style-type: none"> change in sound level (dBA) the area residents will experience 	<p>Realignment alternatives will move traffic closer or farther away from area residents. This may increase or decrease the noise they hear in the future.</p>	<ul style="list-style-type: none"> topographic mapping noise assessment study 	<ul style="list-style-type: none"> maximum increase in noise levels to year 2021 is 1 dBA 1 dBA increase is not considered to be noticeable by the human ear 	<ul style="list-style-type: none"> maximum increase in noise levels to year 2021 is 1 dBA 1 dBA increase is not considered to be noticeable by the human ear

EVALUATION OF ROADWAY ALIGNMENT DESIGN ALTERNATIVES

TRANSPORTATION ENVIRONMENT					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <u>Safe Access to/from Driveways</u>	<ul style="list-style-type: none"> degree of driveway visibility from James Mountain Road area for manoeuvring off/on James Mountain Road 	Motorists accessing properties directly adjacent to James Mountain Road should be able to do so in a safe manner.	<ul style="list-style-type: none"> engineering standards study area/field work topographic mapping discussion with property owners 	<ul style="list-style-type: none"> there is negligible impact on visibility since the driveways and the road in the vicinity of the driveways are not being moved there will be no impact on the area for manoeuvring 	<ul style="list-style-type: none"> there is negligible impact on visibility since the driveways and the road in the vicinity of the driveways are not being moved there will be no impact on the area for manoeuvring
2. <u>Roadway Safety</u>	<ul style="list-style-type: none"> collision reduction (which is based on lane widths, number and severity of curves, grades, amount of visibility, and number of roadside obstacles) 	Motorists travelling through the study area should be able to do so in a safe manner, with the least amount of confusion.	<ul style="list-style-type: none"> engineering standards topographic mapping collision records 	<ul style="list-style-type: none"> the majority of the collisions are occurring on the curve at the top of the escarpment. The realignment of the curve and improved signing should reduce these accidents by as much as 80%. The improved cross section and other changes should reduce other collisions by 20 to 40% 	<ul style="list-style-type: none"> the majority of the collisions are occurring on the curve at the top of the escarpment. The realignment of the curve and improved signing should reduce these accidents by as much as 80%. The improved cross section and other changes should reduce other collisions by 20 to 40%
3. <u>Speed of Traffic</u>	<ul style="list-style-type: none"> change in speed (which is based on lane widths, volume and type of traffic, severity of curves, grades, parking activity, spacing of driveways, and intersections) 	Public input has identified speeding as a problem in the study area.	<ul style="list-style-type: none"> speed studies plans and profiles traffic counts discussion with area residents 	<ul style="list-style-type: none"> the wider lanes and improved alignment will likely result in a negligible increase in speed 	<ul style="list-style-type: none"> the wider lanes and improved alignment will likely result in a negligible increase in speed

EVALUATION OF ROADWAY ALIGNMENT DESIGN ALTERNATIVES

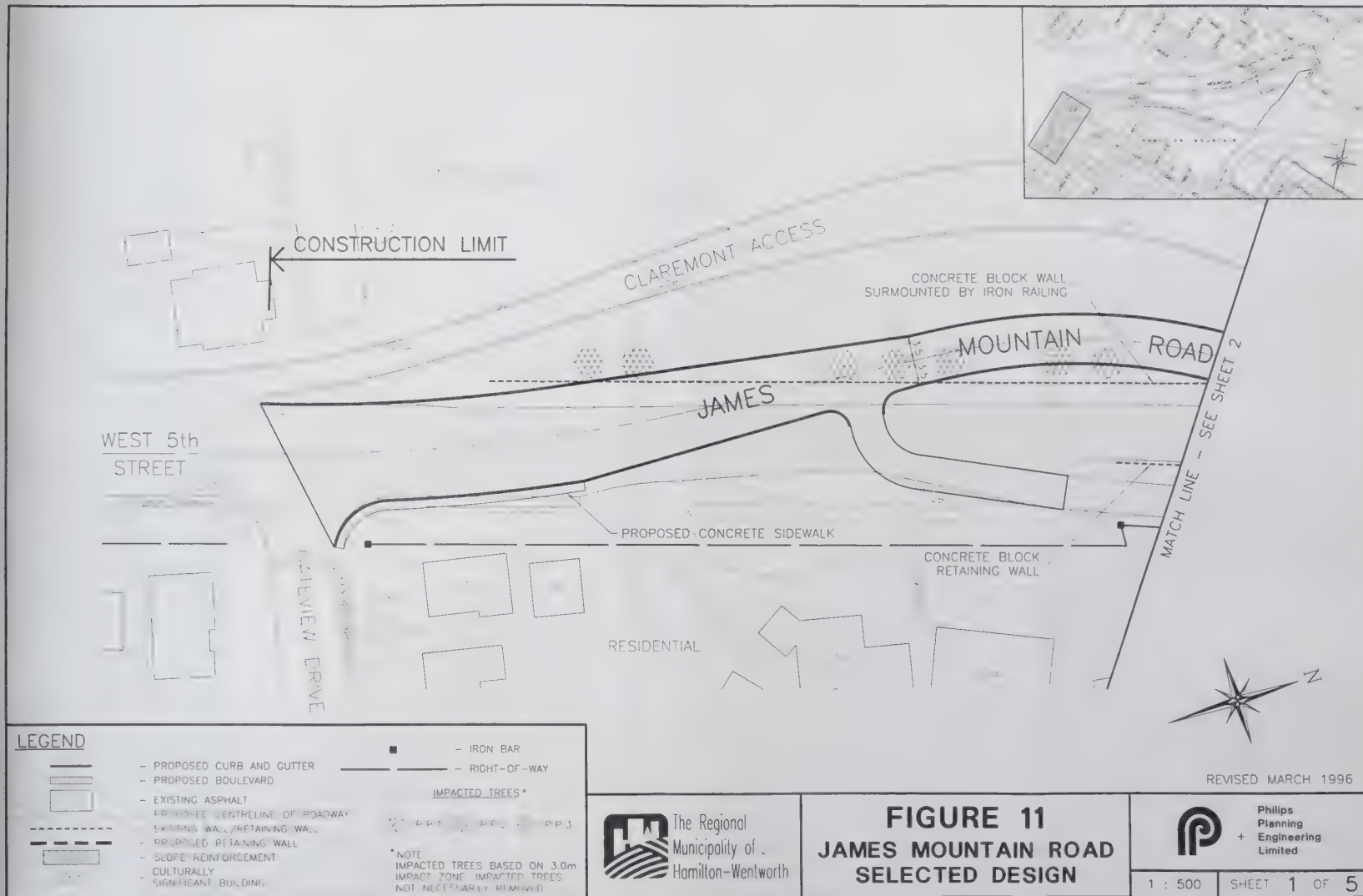
NATURAL ENVIRONMENT					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <u>Vegetation Impact</u> a) Canopy (Trees over 10cm diameter) b) Understory (shrubs & saplings) c) Groundcovers (grasses, wildflowers, etc.)	<ul style="list-style-type: none"> number, species, age, condition, and significance (native, wildlife habitat value) area, botanical quality, and significance same as above 	<p>Extent and type of impacts to roadside vegetation will differ depending on roadway alignment. Knowledge of the type, location, and significance of the resource will assist in determining the type of mitigation required (replanting, management, etc.)</p> <p>The vegetated Escarpment provides habitat for wildlife living and/or travelling through the study area. The objective is to minimize loss of critical habitat and to minimize fragmentation of habitats.</p>	<ul style="list-style-type: none"> field inventory by ecologists geotechnical information topographic mapping communication with HRCA, NEC, Region 	<ul style="list-style-type: none"> estimated area of impact on canopy/understory/groundcovers - 0.21 ha trees removed - 48; significant trees removed -10 fair opportunity for mitigation moderate to high overall impact 	<ul style="list-style-type: none"> estimated area of impact on canopy/understory/groundcovers - 0.31 ha trees removed - 86 significant trees removed - 5 good opportunity for mitigation moderate overall impact
2. <u>Wildlife Impact</u>	<ul style="list-style-type: none"> number and types of wildlife habitat present in study area vicinity observed and potential users (birds, mammals, reptiles, amphibians) and their relative significance 	<p>The vegetated Escarpment provides habitat for wildlife living and/or travelling through the study area. The objective is to minimize loss of critical habitat and to minimize fragmentation of habitats.</p>	<ul style="list-style-type: none"> field inventory topographic mapping communication with HRCA, NEC, Region 	<ul style="list-style-type: none"> no significant species, habitats or conditions are subjected to primary impacts excellent opportunity for mitigation 	<ul style="list-style-type: none"> no significant species, habitats or conditions are subjected to primary impacts excellent opportunity for mitigation
3. <u>ESA (Environmentally Significant Area) Integrity Impact</u>	<ul style="list-style-type: none"> attributes which fulfil criteria for ESA; these reflect the quality, size, and significance of the ESA and its flora/fauna 	<p>The vegetation and wildlife, in conjunction with the Escarpment land form, are part of a larger ecosystem extending along the Escarpment. The impacts on natural conditions and functions of the ESA should be minimized.</p>	<ul style="list-style-type: none"> field inventory geotechnical information topographic mapping communication with HRCA, NEC, Region 	<ul style="list-style-type: none"> green span corridor not significantly or permanently affected no primary impacts or significant species, vistas and landscape contrast impact on land form by introduction of wall fair opportunity for mitigation 	<ul style="list-style-type: none"> green span corridor not significantly or permanently affected no primary impacts or significant species, vistas and landscape contrast good opportunity for mitigation

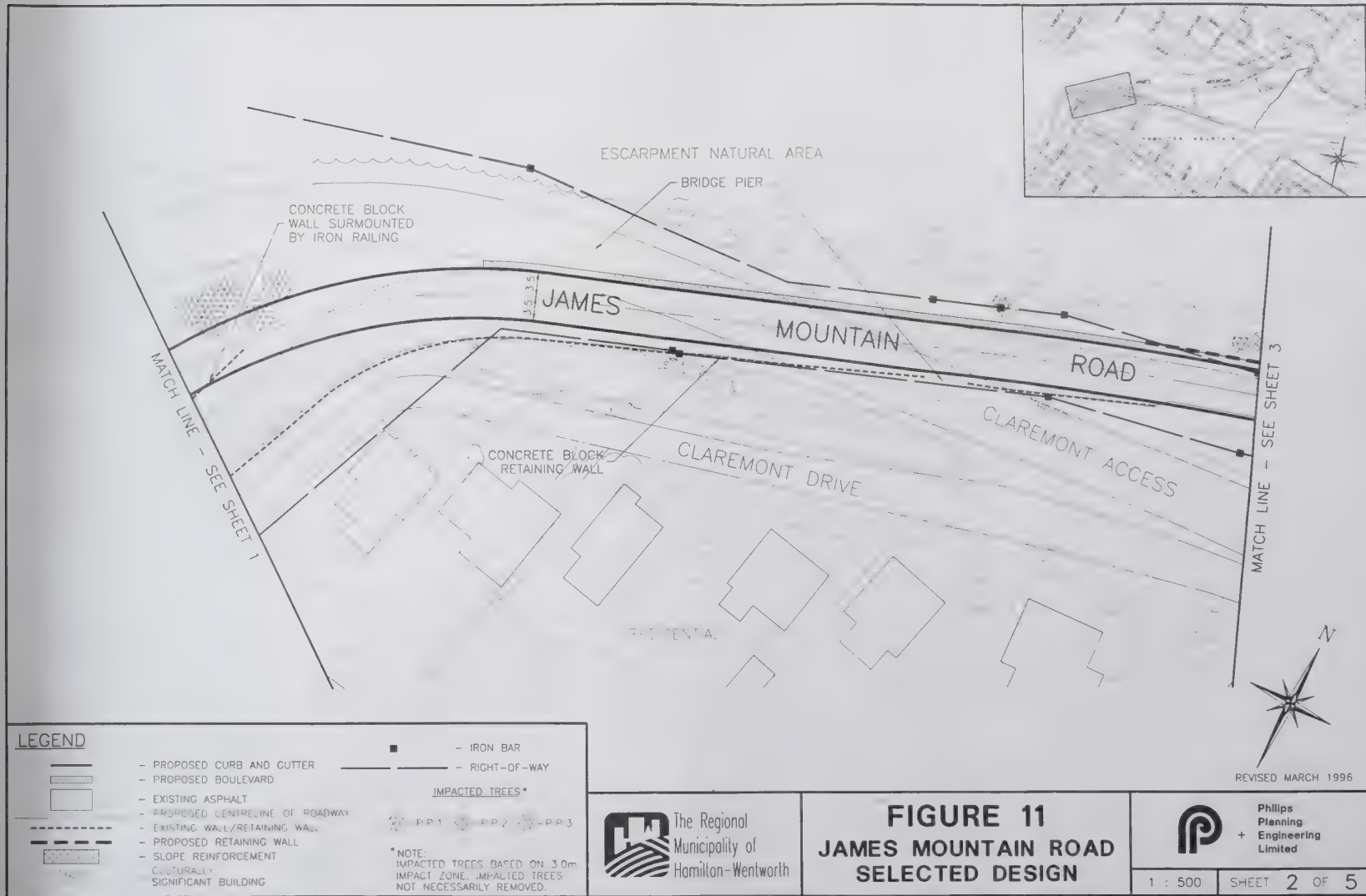
EVALUATION OF ROADWAY ALIGNMENT DESIGN ALTERNATIVES

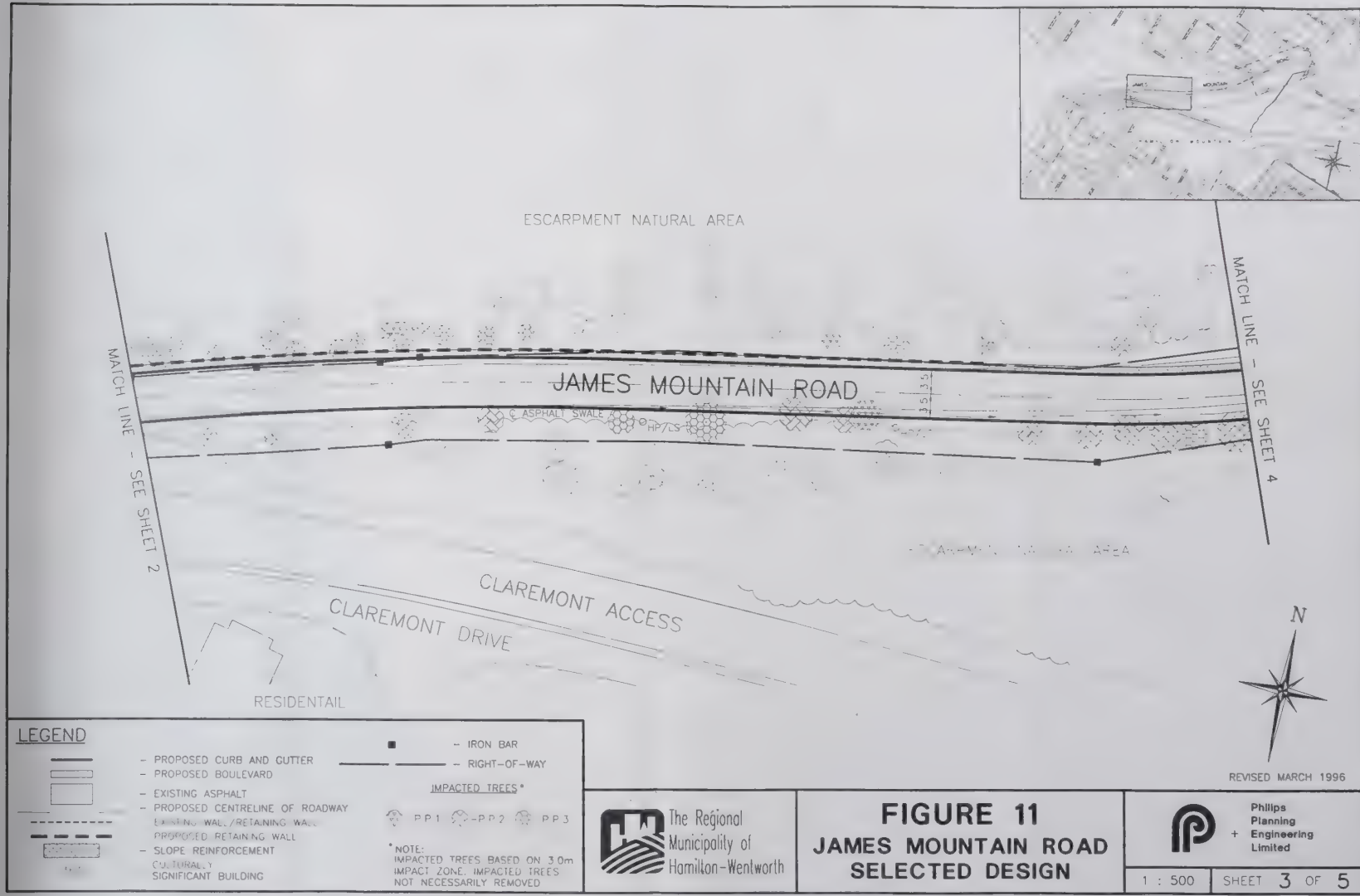
BUILT HERITAGE					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <u>Impact on Cultural Landscape of James Mountain Road</u>	<ul style="list-style-type: none"> length and width of new pavement to be constructed within the roadway length and width of new shoulder to be constructed within the roadway length and height of retaining wall to be constructed within the roadway length and width of overhead tree canopy to be removed from within the roadscape (i.e. visible from road) length and height of new safety barrier to be constructed within the roadscape length of road curvature to be removed or straightened 	<p>James Mountain Road has been identified through public workshops as having a special character and through heritage assessment as being the earliest surviving mountain access still in use. Changes to the width and curvature of this roadway, together with the introduction of new, modern features into the roadscape and/or the loss of other landscape features, may have the potential to adversely disrupt the cultural landscape of the James Mountain Road. The intent is to minimize the disruption of the James Mountain roadway.</p>	<ul style="list-style-type: none"> proposed alternatives prepared by engineering discipline input from other study disciplines 	<ul style="list-style-type: none"> 800 m x 7 m 800 m x 3 m 260 m length x 2.0 m average height Approximately 35 m 400 m x 0.95 m 25 - 30 m 	<ul style="list-style-type: none"> 800 m x 7 m 800 m x 3 m None Approximately 35 m 400 m x 0.95 m 25 - 30 m match existing edge of pavement adjacent to heritage wall
2. <u>Impact on Cultural Heritage Features</u>	<ul style="list-style-type: none"> length and proximity of new pavement to walls of heritage value 	<p>Cultural heritage features are important components of the environment and a community's history. They may be protected under a variety of provincial and local environmental, planning, and heritage legislation. The intent is to minimize the disruption of such features.</p>	<ul style="list-style-type: none"> proposed alternatives prepared by engineering discipline results of heritage assessment report 	<ul style="list-style-type: none"> match existing edge of pavement adjacent to heritage wall 	<ul style="list-style-type: none"> match existing edge of pavement adjacent to heritage wall

EVALUATION OF ROADWAY ALIGNMENT DESIGN ALTERNATIVES

GOVERNMENT POLICY/REGULATION					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <u>Niagara Escarpment Plan (NEP)</u>	<ul style="list-style-type: none"> degree of conformity with Escarpment Natural Area and Urban Area land use policies and applicable development criteria (specifically, new development affecting steep slopes and ravines, water resources, wooded areas, and wildlife habitat, heritage, recreation, and transportation/utilities) 	Portions of the James Mountain Road Study Area fall within the limits of the NEP. NEP land use policies potentially impacted by this project include the Escarpment Natural Area and Urban Area.	<ul style="list-style-type: none"> consultation with NEC staff Niagara Escarpment Plan 	<ul style="list-style-type: none"> moderate degree of conformity with NEP land use policies because of the impact on natural/heritage features of the road on both the upslope and downslope sides 	<ul style="list-style-type: none"> high degree of conformity with NEP land use policies because of the minimal amount of natural/heritage features impacted on the downslope side
2. <u>Hamilton Region Conservation Authority</u>	<ul style="list-style-type: none"> degree of conformity with Ontario Regulation 151/90 (any proposal to place or remove fill material or alter existing grades) 	Portions of James Mountain Road are located within a regulated area associated with the Niagara Escarpment. As such, this area is subject to HRCA Fill, Construction, and Alteration to Waterways Regulations.	<ul style="list-style-type: none"> consultation with HRCA staff Ontario Regulation 151/90 	<ul style="list-style-type: none"> moderate degree of conformity with Regulation 151/90 because of the retaining wall construction required on both sides of road 	<ul style="list-style-type: none"> high degree of conformity with Regulation 151/90 because of the minimal amount of retaining wall construction required on one side of road
3. <u>Vision 2020 and Draft Regional Transportation Review</u>	<ul style="list-style-type: none"> degree of conformity with the Region's commitment to sustainable development 	Both Vision 2020 and the draft Regional Transportation Review provide long term community direction based on the principles and values of sustainable development.	<ul style="list-style-type: none"> consultation with Regional and Area Municipal staff Vision 2020 and Draft Regional Transportation Review 	<ul style="list-style-type: none"> high degree of conformity to sustainable development principles 	<ul style="list-style-type: none"> high degree of conformity to sustainable development principles







LEGEND

- PROPOSED CURB AND GUTTER
- PROPOSED BOULEVARD
- EXISTING ASPHALT
- PROPOSED CENTRELINE OF ROADWAY
- EXISTING WALL/RETAINING WALL
- PROPOSED RETAINING WALL
- SLOPE REINFORCEMENT
- CULTURALLY SIGNIFICANT BUILDING

- - IRON BAR
- RIGHT-OF-WAY

IMPACTED TREES*

- PP1 PP2 PP3

*NOTE:
IMPACTED TREES BASED ON 3.0m
IMPACT ZONE. IMPACTED TREES
NOT NECESSARILY REMOVED



FIGURE 11
JAMES MOUNTAIN ROAD
SELECTED DESIGN

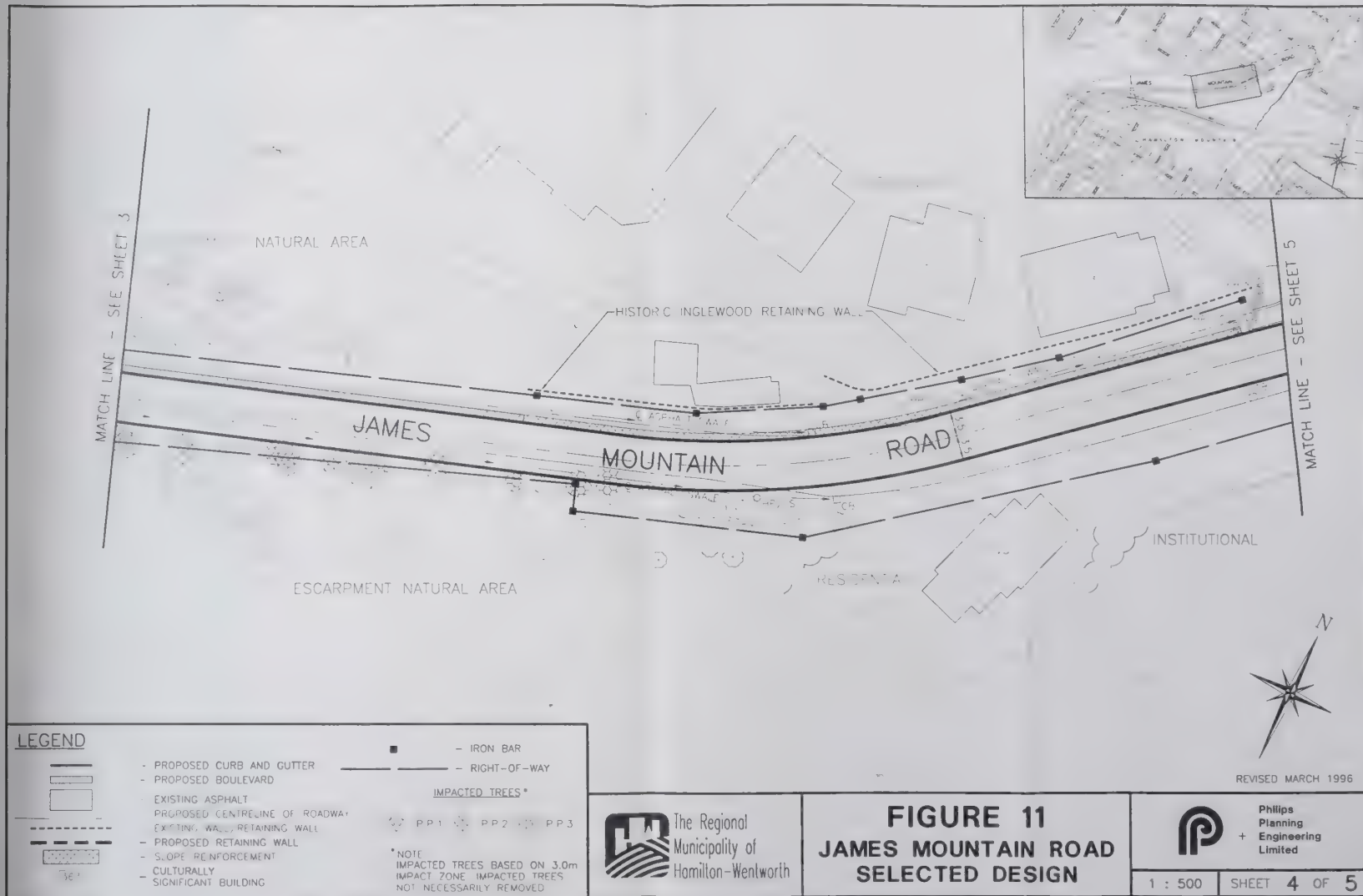


Phillips
Planning
+ Engineering
Limited

REVISED MARCH 1996

1 : 500

SHEET 3 OF 5



MATCH LINE - SEE SHEET 4

ANDREWS AVENUE

GLEW OD DRIVE

HISTORIC BALLINAHINCH RETAINING WALL

CONSTRUCTION LIMIT

JAMES MOUNTAIN ROAD

RESIDENTIAL

FREEMAN PLACE

LEGEND

- PROPOSED CURB AND GUTTER
- PROPOSED BOULEVARD
- EXISTING ASPHALT
- PROPOSED CENTRELINE OF ROADWAY
- EXISTING WALL/RETAINING WALL
- PROPOSED RETAINING WALL
- SLOPE REINFORCEMENT
- CULTURALLY SIGNIFICANT BUILDING
- IRON BAR
- RIGHT-OF-WAY
- IMPACTED TREES*
- P.P.1 P.P.2 P.P.3

*NOTE:
IMPACTED TREES BASED ON 30m
IMPACT ZONE. IMPACTED TREES
NOT NECESSARILY REMOVED



FIGURE 11
JAMES MOUNTAIN ROAD
SELECTED DESIGN

Philips
Planning
Engineering
Limited

1 : 500 SHEET 5 OF 5

REVISED MARCH 1996



6.7.1 Government Agencies

Both the Niagara Escarpment Commission and Hamilton Region Conservation Authority supported the Project Team's recommendation to widen on the downhill side of James Mountain Road.

6.7.2 Public and Interest Groups

Project Team representatives held a Public Information Centre (PIC) and third public meeting August 14th and 16th, 1995 between 2:00 p.m. and 9:00 p.m., and 7:00 p.m. and 9:00 p.m., respectively, at the Presbyterian Church, 116 MacNab Street. The event was advertised in the Hamilton Mountain News and the Hamilton Spectator on August 9, 1995. In addition, approximately 2029 brochures were mailed on July 21, 1995 to area residents and businesses. Individuals that previously expressed interest in the project were also invited to attend these event.

Individuals attending the PIC and/or public meeting were encouraged to sign the visitor registry. A total of 59 individuals signed-in at both events (23 and 36, respectively).

The purpose of the PIC was to:

- present information regarding the study process;
- cover the problem(s) the project is attempting to resolve;
- identify reasonable alternative solutions and designs that should be considered;
- predict the likely impacts these alternatives will have on the local environment; and
- receive feedback from attendees.

The purpose of Public Meeting #3 was to:

- comment on the recommended roadway cross section;
- comment on the recommended roadway alignment design for James Mountain

Road; and

- comment on the recommended solution to the traffic management problems occurring in the James St., Markland St. and St. Joseph's Dr. area.

Individuals wishing to express their comments in writing were encouraged to complete a comment sheet/questionnaire and return it by September 8, 1995 (see Appendix 3).

The various comments public meeting participants raised during the event and/or recorded on a comment sheet can be separated into the following categorizes:

Selected Roadway Cross-section

Out of 19 respondents, 8 had no specific concerns with any aspect of the roadway cross-section selected. The 11 remaining respondents raised the following concerns:

- (1) do not need a pedestrian walkway
- (1) promotes air and noise pollution
- (1) will result in increased traffic speed
- (1) removes too many trees
- (1) will negatively impact the escarpment
- (1) retaining wall will erode
- (2) concern with pedestrian and cyclist safety
- (3) comments not related to cross-section question

Comments heard during the public meeting are:

- lane widths should be wide enough to accommodate two buses
- 5 individuals did not support the walkway, 4 did
- need to consider a minimal impact alternative
- widen only in the area where accidents are occurring
- where are the breakdown statistics

Roadway Design Evaluation Criteria

Out of 15 respondents, 11 supported the proposed criteria. The 4 remaining respondents raised the following concerns:

- (1) should rank evaluation criteria
- (1) simple cost effective solution is not addressed
- (1) project is too heavily weighted to people below the escarpment
- (1) comment is unrelated

Opinions concerning evaluation criteria weighting are as follows:

- road safety, noise impact, speed of traffic and wildlife impact should be given **high importance**.
- private property, visual impact, cultural heritage, vegetation, cultural landscape, cost and driveway access safety should be given **moderate to high importance**.

No comments were voiced during the public meeting concerning the roadway design evaluation criteria.

Roadway Design Alternatives

Out of 15 respondents, 8 preferred Alternative 2 (down slope), 2 preferred Alternative 1 (up slope), and 5 preferred neither. Individuals that preferred neither alternative cited the following reasons:

- the no change alternative was not considered
- do not need walkway
- too great of impact on the environment
- will increase traffic speed and subsequent accidents
- cost is too great

Comments voiced during the public meeting are:

- supports mitigation proposal and Alt. 2
- will the Region consider plantings in the

Inglewood traffic island area

- is there money available
- still have not adequately considered a minimalist alternative

6.7.3 Regional Government Decision

The Project Team recongized early on in planning that widening the existing cross-section to include features such as a refuge/walkway area would generate concerns for a number of people.

Following the last round of PICs and public meetings, the Project Team met with directly affected land owners to review the planning process that led to the recommended alternative and discuss what measures should be taken to mitigate/compensate predicted impacts. Letters inviting local aldermen and property owners were mailed approximately two weeks prior to an October 16, 1995 meeting date.

The results of this meeting and others held December 12, 1995, and January 15, 1996 led to the following changes:

- The retaining wall and guide rail were combined at slightly higher costs to reduce the cross-section width by 0.5 metres; and
- Uphill and downhill curb and gutter widths were each reduced from 0.5 metres to 0.25 metres. Instead of water flowing on a concrete gutter its flows on the outer limits of the travel lane (less desirable).

The net effect this has on the recommended cross-section is a reduction in overall width from 10.5 metres to 9.5 metres. The reduction in width still permitted the provision of the refuge/walkway area. The difference in net impact is described in Table 9.

On January 29, 1996 the Region's Transportation Services Committee (TSC) voted in favour of

removing the refuge/walkway area and having staff re-investigate the feasibility of providing lay-by areas for disabled vehicles. Once again, the Project Team indicated that lay-by facilities are not feasible for the following reasons:

- vehicles travelling upbound on the steep grade have to break down at a lay-by to make use of it;
- the steep grade will likely prevent a vehicle from coasting to an uphill lay-by;
- the relatively high volume of traffic will prevent a vehicle from backing-up to a downhill lay-by; and
- in the downbound direction lay-bys are unnecessary since vehicles, in most cases, can coast to the bottom of the roadway, where an adequate refuge area already exists.

The decision to omit the refuge/walkway area reduced the overall width of the cross-section from 9.5 metres to 8.5 metres. Before making a decision, the Committee was informed of the implications of removing the refuge/walkway. They are summarized in Table 10.

Regional Council, through their Transportation Services Committee, resolved that, given all of the evidence (i.e., net impact assessment carried out during Phase III - Roadway Design), a refuge/walkway is not preferred on James Mountain Road. Therefore, the preferred alternative does not include a refuge/walkway.

TABLE 9: NET EFFECTS OF A PLATFORM REDUCTION FROM 10.5 METRES TO 9.5 METRES		
EFFECT	10.5 m	9.5 m
Cost of construction	\$1.55 million	\$1.48 million
Private property	590 m2	410 m2
Vegetation # of trees # significant	76 5	66 5
Visual impact	moderate	moderate

TABLE 10: NET EFFECTS OF A PLATFORM REDUCTION FROM 9.5 METRES TO 8.5 METRES		
EFFECT	9.5 m	8.5 m
Cost of construction	\$1.48 million	\$ 1.41 million
Private property	410 m2	250 m2
Vegetation # of trees # significant	66 5	52 4
Visual impact	moderate	low
Traffic	safe	nominally unsafe

CHAPTER 7

Description of the Selected Design

7.0 DESCRIPTION OF THE PREFERRED DESIGN

The preferred design has been developed with consideration for the impacts on all environments, with particular attention to minimizing impacts on the significant features of the ESA and the visual character of the roadway. Where possible, the concerns of the public and interested agencies have been accommodated in the preferred design.

7.1 CROSS SECTION

The preferred cross section will be situated on a platform that is a maximum of 8.5 metres wide and consists of the following elements (see Figure 8):

Lanes

Two 3.5 m wide asphalt lanes -- this lane width presents a balance between the negative impacts of widening to the natural and cultural environments with the positive impacts on safety.

Curb and Gutter

Concrete barrier curbs approximately 0.25 metres wide on both sides of the road. The type of curb provided on the north side of the road may be mountable or semi-mountable depending on the type of guide rail to be implemented. The mountable curb is typically 0.1 metres wider than the barrier or semi-mountable curb, however, the total platform width will not exceed 8.5 metres.

Refuge/Walkway

A refuge/walkway will not be provided.

Guide Rail

A guide rail will be provided on the north side of the road to protect errant vehicles from the steep

slope of the Niagara Escarpment. The footprint of the guide rail will be about 0.5 metres wide. It is expected that the deteriorated steel beam guide rail that is presently on the north side of the road will be replaced. However, the Region will discuss with stakeholders the provision of a reinforced concrete guide rail with a 'hand-laid stone' facade. Decisions with respect to the type of guide rail to be implemented will not result in a platform width of greater than 8.5 metres.

The position that the guide rail occupies within the road allowance (i.e., the distance between the edge of the travelled lane and the face of the guide rail) will ultimately depend on the type of guide rail implemented. Regardless, the guide rail will be located so that the total platform width is 8.5 metres or less.

Retaining Walls

A retaining wall will be constructed on the downhill (i.e., north) side of the road from east of the Claremont overpass to the end of the existing Inglewood wall at the bottom of the escarpment. The exposed section of the retaining wall is expected to be 150 metres long and located throughout the natural area. The actual length may vary depending on soil conditions uncovered during detail design and during construction.

The maximum height of the retaining wall for a 8.5 metre platform is approximately 1.5 metres above grade.

The type of wall to be constructed will be decided in detail design. Stakeholders will be consulted about the appearance of the retaining wall, in particular as it impacts the view from the backyards of the houses on Inglewood Drive.

The Inglewood wall is tilting and leaning in several locations along its length. Approximately 100 metres of reinforced concrete wall will be

constructed (below the finished grade) to repair/stabilize this heritage wall. The intention is to construct the new wall to the south of the existing wall. The new wall will intercept soil pressures and loading caused by traffic and relieve pressure from the heritage wall.

7.2 ALIGNMENT

The preferred horizontal alignment (the route or path followed by the road as seen from overhead) is shown in Figure 11. In the relatively undisturbed natural area, the preferred alignment matches the south curb with the toe of the uphill escarpment slope. The only significant change in alignment is at the top of the escarpment. A relatively sharp curve has contributed to a number of collisions, and is proposed to be flattened as a collision countermeasure.

Changes in the vertical alignment (the path the roadway follows if viewed from the side) would result in significant impacts due to the steep escarpment slopes that terminate at the roadway's edge. Therefore, the preferred vertical alignment follows the existing roadway profile.

7.3 DRAINAGE

The roadway platform will be graded so that precipitation falling on the platform, or runoff coming from the uphill slope, will be directed to catchbasins adjacent to the curbs. The catchbasins will be connected to a storm sewer that will be an extension of the existing storm sewer system on James Street. The sewers in the existing storm water system have been appropriately sized to accommodate the increased flow from the proposed sewer.

The location of catchbasins, manholes and storm sewer will be determined at the detailed design stage.

Subgrade drainage (i.e., drainage of the gravel and soil immediately below the road) will be handled by a subdrain system installed under and behind the curb and connected directly to the catchbasins.

7.4 ILLUMINATION

Full illumination is required throughout the roadway, consistent with existing conditions. Light standards will be located, and mounting heights selected, so that interference by the tree canopy with the distribution of light is minimized. Lighting will be directed and contained as much as possible to limit impact on adjacent residents.

7.5 UTILITIES

The Niagara Escarpment typically forms a natural barrier to the distribution of services. Gas, Bell, Hydro, water and sewer services are found at either end of the study area and are fed from separate systems at the top and bottom of the escarpment, respectively. With the exception of the hydroelectric power required for street lighting, and the proposed storm sewer, no utilities will be located along James Mountain Road.

The exact location of existing utilities, as well as any possible relocations, will be determined in detailed design.

7.6 PROPERTY REQUIREMENTS

Acquisition of private property will be required along the north side of James Mountain Road, between the Claremont Access overpass and the west end of the Inglewood wall west of Aberdeen Avenue. Property will be acquired to 1 m beyond the outside face of the proposed retaining wall. The width of property required varies, with a maximum of approximately 3.2 m. The total area required is approximately 250 m² from 4

properties.

The existing road is currently located on private property on the south side of the road at 363 James Street South. The preferred alignment still requires the use of this property and it will be acquired.

7.7 TRAFFIC CONTROL DEVICES

There are no significant changes expected in terms of traffic signs. Traffic signs will be evaluated prior to and during construction. Faded, missing and unsuitable signs will be corrected at that time.

Pavement markings (i.e., line painting) will reflect the preferred design and will be in accordance with the accepted National and Provincial standards.

Currently, James Mountain Road operates as one lane in each direction of travel, except during the afternoon peak period when the downbound lane becomes an upbound lane (i.e., part-time one-way operation). The Regional Transportation Review proposes to remove the part-time one way operation and restrict the downbound lane to buses only during the afternoon peak period. Changes in traffic control that are required to accommodate either scheme are classified as Schedule 'A' activities under the Class EA and will be decided when the Regional Transportation Review is considered and adopted by Regional Council.

7.8 STAGING AND CONSTRUCTION

According to the 1996 to 2000 Capital Budget, the current schedule for the design and construction of this road is as follows:

- Property acquisition - 1996
- Detail Design (including stakeholder consultation) - 1996
- Construction - 1997

The marginally stable slope will be monitored by the Transportation Department and should a slope failure become evident, then the Transportation Department may perform emergency repairs at an accelerated schedule.

Given the narrow road platform and the nature of the work required it is anticipated that James Mountain Road will be closed to traffic for approximately 5 months. The contract is expected to start after April 15th and be completed before November 15th. The timing of the construction is subject to weather conditions and other constraints as experienced. Access to properties at the bottom of the escarpment will be maintained throughout construction. However, minor interruptions (one or two days) in access will be required while work is completed directly in front of these properties.

Construction generally will start at 7:00 a.m. and can terminate as late as 7:00 p.m. Construction noise is controlled through contract specifications and municipal noise by-laws. Dust caused by construction will be controlled through the contract specifications requiring the use of dust suppressants such as water or calcium chloride.

Consultation with adjacent property owners will determine if vegetation that is excavated for the proposed works can be left on site.

7.9 MITIGATION AND MONITORING

The preferred design has minimized but can not avoid all environmental impacts. In order to minimize these impacts, several mitigation measures are proposed. Potential impacts and associated mitigation measures are summarized in Table 11.

Mitigation measures will be implemented and maintained through on site inspections by the Regional Municipality of Hamilton Wentworth staff who will ensure that the natural environment

will not be further impacted by construction activities. The inspection staff will also ensure that items such as public liaison, sedimentation controls and proper signs are maintained during construction.

7.10 REVISIONS AND ADDENDA TO THE ENVIRONMENTAL STUDY REPORT

The Environmental Study Report (ESR) identifies the Region's plans to reconstruct and widen James Mountain Road between Gateview and Inglewood Drives. The preliminary design plans found in this report illustrate the preferred design, but are subject to minor modifications during detail design.

The purpose of this section is to describe procedures which will be followed to accommodate minor modifications and changes to the ESR after its filing on public record. Minor changes or modifications to the preferred design should not be construed as a formal change to the undertaking. For the purpose of this report, a major change would include a major shift in the alignment or a change in the undertaking, such as a revised cross-section (i.e., the introduction of new elements into the cross-section as opposed to minor changes in the dimensions of the elements of the cross-section).

Procedures for Addressing Minor Changes

During the design and construction of the project, modifications may be required due to:

- site specific problems which may occur during the design of the project;
- improvements in the design to provide more benefits and/or lower impacts; and
- circumstances which develop at the time of construction.

These are modifications which may result in changes to the project presented in this ESR, but

which would not alter the recommendation of reconstructing and widening James Mountain Road to meet the project objectives. Such minor changes to the ESR will be addressed without a formal approval and comment process, but the affected public and agencies will be consulted and advised.

Procedures for Addressing Major Changes

An addendum will be filed on public record for any changes which entail significant variances to the concept of the undertaking identified in the ESR. The addendum will document:

- the reason for the change;
- alternative solutions to the change;
- the benefits and impacts associated with the alternative solutions;
- the public consultation process involved with the change, including review agency involvement;
- the recommended change including any mitigative or enhancement measures; and
- further commitments by the Region.

Notification will take the form of a letter report which will be filed with the original ESR document, and will be on display for at least 30 days.

TABLE 11

**SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE PREFERRED ALTERNATIVE**

Factor	Potential Impacts	Mitigation Measures	Time Frame
Natural Environment	Vegetation removal/damage <ul style="list-style-type: none"> • Habitat fragmentation • Degradation of botanical quality • Removal of "significant" trees • Damage to remaining trees 	<ol style="list-style-type: none"> 1. Provide re-planting in disturbed areas with native trees, shrubs and groundcovers, including fast-growing species. 2. Provide adequate soil media and rough wall surfaces to facilitate revegetation. 3. Minimize removals of best quality "significant" trees (where possible). 4. Consider existing trees when positioning light standards, signage, etc. 5. Implement construction management practices including preventative pruning, protective hoarding, regular tree inspection. 6. Use felled trees to reduce soil erosion. 	Landscape plans to be developed in detail design with replanting to occur shortly after or during construction.
	Potential for stormwater to impact on downstream water quality during and after construction	<ol style="list-style-type: none"> 1. Protect water quality by using Ontario 'best management' practices. 	To be determined in detail design.
Social Environment	Loss of sense of enclosure and framing (visual envelope)	<ol style="list-style-type: none"> 1. Provide re-planting of native trees, including fast growing species, in priority locations close to roadway. 2. Maintain or enhance overall curvature of road to limit sight lines to 100-150 m (based on mature vegetation). 3. Minimize removals of key "significant" trees (where possible). 	Landscape plans to be developed in detail design with replanting to occur shortly after or during construction.

TABLE 11

**SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE PREFERRED ALTERNATIVE**

Factor	Potential Impacts	Mitigation Measures	Time Frame
Social Environment (Cont'd)	Changes to visual contrast through introduction of guard rails, lighting standards	<ol style="list-style-type: none"> 1. Do not paint the guide rail yellow. 2. Light standards will be unobtrusive colours. 3. Consult with stakeholders on the type and appearance of the guide rail and street lights. 	Consultation with stakeholders to occur concurrently with detail design.
	Visual changes to natural landscape features (escarpment face, talus rockpiles, specimen mature trees)	<ol style="list-style-type: none"> 1. Minimize obstruction of views of escarpment face and toe of slope. 2. Minimize removals of key "significant" trees (if possible). 	A landscape architect will be included in the detail design phase of the project.
	Reduced screening of residents' views of road and vehicles	<ol style="list-style-type: none"> 1. Provide re-planting in openings with native trees, shrubs and groundcovers, including fast growing species. 	Landscape plans to be developed in detail design with replanting to occur shortly after or during construction.
	View of retaining wall from perspective of adjacent residents	<ol style="list-style-type: none"> 1. Provide re-planting in openings with native trees, shrubs and groundcovers, including fast growing species. 2. Provide rough surface on retaining wall combined with vine plantings at base. 3. Consult with stakeholders to select a wall facade that will compliment the environment. 	Landscape plans to be developed in detail design with replanting to occur shortly after or during construction. Consultation with stakeholders to occur concurrently with detail design.
	Lighting	<ol style="list-style-type: none"> 1. Use discrete contemporary lighting design. 2. Direct light to roadway and minimize penetration downslope. 	
Transportation Environment	Utility relocation	<ol style="list-style-type: none"> 1. Contact utilities for relocation requirements and coordination. 	To be done during detail design.

TABLE 11

**SUMMARY OF IMPACTS AND MITIGATION MEASURES
FOR THE PREFERRED ALTERNATIVE**

Factor	Potential Impacts	Mitigation Measures	Time Frame
Transportation Environment (Cont'd)	Emergency services	<ol style="list-style-type: none"> 1. Contact the Fire and Police Departments and ambulance services, to notify them of road closures and detours. 2. Notify the Fire Department of interruptions in water service (if any). 3. Invite these agencies to a pre-construction meeting. 	To be done prior to construction.
	Traffic composition and volumes	<ol style="list-style-type: none"> 1. The function of this road in the Region's escarpment crossing strategy is being addressed by the Regional Transportation Review. 	This project is currently actively seeking public input.
	Access to properties	<ol style="list-style-type: none"> 1. Access to all driveways will be maintained during construction from the bottom of the escarpment only. 2. Temporary disruption of access (1 or 2 days duration) will be required when construction takes place directly in front of affected properties. 3. Notify property owners of timing and duration of the disruption in service. 4. There are no permanent negative impacts to driveways on James Mountain Road. 	Notification of disruption to be done during construction.

APPENDIX A

Tree Inventory

JAMES MOUNTAIN ROAD

GATEVIEW DRIVE TO INGLEWOOD DRIVE TREE INVENTORY

Tree No	Species	Diameter (cm)	Crown Reserve(m)	Biological Health	Preserv Priority	Comments
1	Sugar Maple	50	10	low	3	broken crown with dead sections; trunk damage; up to 1m fill at base; moderate slope
2	Sugar Maple	40	15	high	3	surface slumpage
3	Sugar Maple	20	10	high	3	three-trunked; heavily pruned crown
4	Black Locust	10	3	n/a	3	dead
5	Black Locust	40	15	moderate	3	major forking, broken crown; bark damage; trunk
6	Red Elm	20	10	moderate	3	epicormic branching; crown damage
7	Red Elm	50	15	low	3	basal trunk damage; crown damage
8	Sugar Maple	40	15	moderate	3	major fork; broken crown; edge of slope
9	Horse Chestn	50	10	moderate	3	broken crown; 5% lean; edge of slope; epicormic
10	White Ash	15	10	moderate	2	edge of slope
11	Sugar Maple	15	5	moderate	3	moderate slope; trunk cankers; basal trunk dama
12	Sugar Maple	50	15	high	2	> 15% lean; severe slope
13	Norway Maple	20	10	high	2	moderate slope; 10% lean; 1-sided crown
14	Sugar Maple	25	10	high	1	moderate slope
15	Red Elm	40	15	high	2	basal trunk canker; 15% lean
16	Black Locust	50	15	low	3	trunk bark damage
17	Black Locust	60	15	low	3	forked trunk with bark damage; broken crown; severe slope
18	Sugar Maple	50	15	moderate	2	moderate slope; bark damage; trunk rot
19	Black Locust	40	10	low	3	broken crown; moderate slope
20	Black Locust	40	10	moderate	3	moderate slope; 10% lean
21	Red Elm	40	15	high	2	moderate slope; epicormic shoots; crown damag
22	Sugar Maple	50	20	high	1	moderate slope
23	Horse Chestn	50	15	low	3	broken crown, 1-sided crown; 15% lean; modera
24	Red Elm	80	20	moderate	2	moderate slope; major forking; rot in base
25	not on map					
26	Sugar Maple	50	15	high	2	moderate slope; 1-sided crown
27	Sugar Maple	50	15	high	1	moderate slope; 1-sided crown; 10% lean
28	Sugar Maple	50	20	high	2	basal forking; pruning small forks to upgrade QF
29	Sugar Maple	35	15	moderate	1	major forking; broken crown
30	Sugar Maple	50	20	high	1	broken crown
31	Red Elm	50	20	high	1	moderate 1-sided crown
32	Red Elm	40	15	moderate	2	broken crown
33	Red Elm	60	20	high	2	steep slope; exposed roots; 1-sided crown
34	Red Elm	60	15	moderate	3	severe forking; crown damage; 10% lean; trunk
35	Sugar Maple	40	15	moderate	3	basal trunk rot; heartwood rot
36	Red Elm	50	15	high	2	moderate 1-sided crown
37	Sugar Maple	30	10	high	2	exposed roots, severe
38	Sugar Maple	40	15	high	1	exposed roots
39	Sugar Maple	15	10	moderate	2	basal canker; 10% lean
40	Sugar Maple	30	15	high	1	basal canker
41	Basswood	30	10	moderate	2	major forking; epicormic shoots in crown
42	Norway Maple	15	10	high	2	exposed roots; moderate slope; 10% lean
43	Norway Maple	40	15	high	1	exposed roots; moderate slope; crown damage
44	Norway Maple	20	10	high	3	unbalanced crown; moderate slope; 10% lean
45	Norway Maple	25	10	high	3	major fork at base
46	Norway Maple	30	10	high	2	major fork at base
47	Norway Maple	20	10	high	1	
48	Red Elm	15	5	high	2	moderate 1-sided crown
49	Norway Maple	35	15	high	2	crack marks on upper trunk
50	Norway Maple	35	15	moderate	3	epicormic shoots; major basal forking
51	Red Elm	25	10	moderate	2	moderate broken crown
52	Siberian Elm	25	10	moderate	3	growing along side concrete garage wall
53	Black Walnut	10	5	moderate	2	exposed roots; major fork at base
54	White Spruce	15	5	n/a	3	dead
55	Tree of Heave	40	15	high	1	well-shaped tree for species
56	Black Walnut	25	10	high	2	
57	Black Locust	60	20	low	3	bark damage on trunk; broken crown; 10% lean
58	Norway Maple	70	20	high	1	exposed roots
59	Black Locust	50	15	low	3	broken crown

60	Aspen	30	15	low	3	broken crown; 30% lean
61	Red Elm	15	5	low	3	dead and broken crown; 50% bark removed from
62	Norway Maple	25	10	moderate	2	major forking at base
63	Norway Maple	25	10	high	2	10% lean
64	Norway Maple	35	15	high	1	
65	Red Elm	n/a	n/a	n/a	3	dead
66	Horse Chestn	15	10	moderate	2	suppressed
67	Black Locust	50	15	moderate	3	major forking; crown damage
68	White Ash	10	5	moderate	3	cankers on trunk
69	Norway Maple	30	10	moderate	3	basal canker with heartwood rot
70	Norway Maple	30	10	moderate	2	exposed roots; crooked trunk
71	Black Locust	20	5	low	3	10% lean; broken crown
72	Black Locust	25	10	moderate	3	broken crown; 10% lean
73	Red Elm	30	10	moderate	3	basal forking; broken crown
74	Black Locust	35	10	moderate	2	broken crown
75	Horse Chestn	60	10	moderate	2	epicormic shoots on trunk; broken crown
76	Black Locust	45	15	moderate	3	broken crown
77	Sugar Maple	15	5	moderate	2	10% lean
78	Manitoba Mapl	15	5	moderate	3	10% lean; epicormic shoots; crooked trunk
79	Black Locust	30	10	moderate	3	10% lean; major forked trunk; trunk canker
80	Black Locust	15	5	low	3	broken crown; crown > 50% dead
81	Black Locust	40	10	low	3	broken crown; crown < 50% dead
82	Black Locust	40	10	low	3	broken crown; crown > 50% dead; hazard; broke
83	Black Locust	30	15	low	3	broken crown; split fork at base; bracket fungus
84	Norway Maple	20	15	moderate	3	15% lean; bent trunk
85	Norway Maple	15	5	moderate	2	5% lean; exposed roots; bent trunk
86	Black Locust	30	10	moderate	2	5% lean; broken crown
87	Black Locust	15	5	low	3	10% lean; bent trunk; broken crown
88	Norway Maple	20	10	high	2	15% lean; unbalanced crown
89	Norway Maple	35	15	high	2	5% lean; exposed roots; bent trunk
90	Black Locust	35	10	moderate	3	broken crown
91	Black Locust	10	n/a	n/a	3	dead
92	Black Locust	40	5	low	3	trunk cankered and split; broken crown
93	Black Locust	40	10	low	3	5% lean; broken crown
94	Black Locust	40	10	low	3	15% lean; hazardous broken crown
95	Norway Maple	35	10	high	1	
96	Black Locust	20	n/a	n/a	3	dead; snagged in nearby tree
97	Black Locust	40	10	moderate	2	broken crown
98	Black Locust	20	5	low	3	broken and bent crown; > 50% dead
99	Red Elm	10	5	moderate	3	1-sided crown; suppressed
100	Norway Maple	40	20	high	2	crown damage; 5% lean
101	Sugar Maple	10	3	moderate	3	broken leader; epicormic shoots in crown
102	Black Locust	25	5	low	3	15% lean; broken crown
103	Sugar Maple	15	5	high	1	
104	Black Locust	15	5	moderate	3	10% lean; broken crown
105	Black Locust	20	5	low	3	10% lean; broken crown
106	Norway Maple	15	10	high	2	5% lean; 1-sided crown
107	Sugar Maple	20	10	high	1	
108	Norway Maple	25	10	high	2	1-sided crown
109	Black Locust	35	5	moderate	3	5% lean; broken crown
110	Black Locust	50	10	low	3	5% lean; severely broken crown; forked trunk; dead section in crown
111	Norway Maple	45	15	high	2	bent trunk; 5% lean
112	Red Elm	20	10	low	3	50% crown dead
113	Norway Maple	25	10	moderate	2	bent trunk at base
114	Black Locust	25	5	low	3	broken and undersized crown
115	Black Locust	45	10	moderate	3	major forking; broken crown
116	Black Maple	15	10	high	2	1-sided crown
117	Red Elm	35	15	high	3	10% lean; suppressed
118	Red Elm	50	15	high	2	10% lean
119	Norway Maple	30	15	moderate	2	suppressed; basal forking; exposed roots
120	Sugar Maple	20	10	high	1	
121	Norway Maple	35	15	high	2	5% lean; bent trunk
122	Norway Maple	50	15	moderate	3	3-trunked; 5% lean; exposed roots; epicormic shoots in crown; snags in lower part of crown
123	Norway Maple	30	10	moderate	3	suppressed; forked trunk; exposed roots
124	Norway Maple	30	15	moderate	2	epicormic shoots and cankers on trunk
125	Norway Maple	35	15	moderate	3	10% lean; dead snag leaning in tree
126	Red Elm	10	n/a	n/a	3	dead

127	Sugar Maple	20	10	moderate	2	10% lean; major forking
128	Sugar Maple	15	10	high	1	suppressed
129	Red Elm	35	10	high	1	broken crown
130	Sugar Maple	15	5	high	1	
131	Red Elm	40	10	moderate	1	epicormic shoots; cabled to utility pole
132	Red Elm	20	5	moderate	2	bent crown; suppressed; dead & broken crown
133	Norway Maple	50	15	high	2	bent crown
134	Red Elm	25	10	high	1	
135	Red Elm	15	10	moderate	3	bent trunk; broken crown
136	Red Elm	20	10	high	3	10% lean; 1-sided crown
137	Red Elm	10	5	high	3	15% lean; bent trunk
138	Sugar Maple	15	10	high	1	dead snag leaning in tree
139	Red Elm	40	10	moderate	2	dead branches in crown
140	Sugar Maple	10	5	high	1	
141	Red Elm	25	10	high	2	suppressed; crown damage
142	Norway Maple	30	10	high	2	5% lean; 1-sided crown
143	Red Elm	30	10	moderate	3	broken crown; suppressed
144	Butternut	25	5	low	3	broken crown; trunk cankers
145	Red Elm	30	20	moderate	2	major forking, broken crown, 10% lean
146	Red Elm	25	5	moderate	2	broken crown
147	Norway Maple	25	10	high	2	bent trunk
148	Sugar Maple	60	10	high	2	5% lean, dead snag in tree
149	Norway Maple	20	5	high	3	10% lean; bent trunk; 1-sided crown
150	Norway Maple	20	5	high	3	exposed roots; poor crown form
151	Norway Maple	25	10	high	2	5% lean; exposed roots; suppressed
152	Norway Maple	25	10	moderate	3	broken crown; 10% lean
153	Sugar Maple	50	15	high	2	
154	Norway Maple	30	10	moderate	3	epicormic shoots on trunk; bent trunk
155	Norway Maple	30	10	moderate	3	broken crown
156	Norway Maple	15	10	moderate	2	suppressed
157	Norway Maple	40	15	high	1	exposed roots
158	Sugar Maple	20	10	high	2	suppressed
159	Norway Maple	20	10	moderate	2	10% lean
160	Basswood	30	10	moderate	3	1-sided crown; 5% lean
161	Sugar Maple	15	5	high	2	suppressed; 5% lean
162	Sugar Maple	15	5	n/a	3	dead
163	Norway Maple	25	10	high	2	bent trunk; exposed roots; snag in tree
164	Norway Maple	30	10	high	1	
165	Norway Maple	40	15	high	2	5% lean
166	Sugar Maple	20	5	high	1	
167	Sugar Maple	20	5	high	1	
168	Norway Maple	35	10	high	3	10% lean; broken crown
169	Sugar Maple	30	10	n/a	3	dead
170	Norway Maple	20	10	high	2	10% lean
171	Norway Maple	15	10	moderate	3	15% lean; suppressed; 1-sided crown
172	Norway Maple	25	10	moderate	3	broken crown
173	Norway Maple	25	10	moderate	2	bent trunk
174	Norway Maple	25	10	moderate	2	5% lean; split trunk
175	Norway Maple	30	10	moderate	2	bent trunk
176	Sugar Maple	20	10	moderate	3	exposed roots; broken & thin crown
177	Sugar Maple	20	3	low	3	crown missing
178	Norway Maple	35	15	high	1	bent trunk
179	Sugar Maple	20	10	high	3	5% lean; crown unbalanced
180	Sugar Maple	10	5	high	1	
181	Norway Maple	25	10	high	2	forked trunk
181B	Sugar Maple	15	5	high	1	
182	Sugar Maple	20	5	high	1	
183	Sugar Maple	20	10	high	1	
184	Norway Maple	25	10	moderate	2	5% lean; damaged base of trunk
185	Sugar Maple	40	15	high	3	5% lean
186	Sugar Maple	30	10	high	2	
187	Norway Maple	20	10	high	2	forked trunk
188	Sugar Maple	25	10	low	3	cankered trunk; 5% lean; broken crown
189	Sugar Maple	30	15	high	1	crown damage; exposed roots
190	Norway Maple	30	15	high	1	exposed roots
191	Sugar Maple	25	10	moderate	2	bent trunk
192	Black Walnut	25	10	high	2	1-sided crown
193	Red Elm	15	5	high	1	suppressed
194	Red Elm	15	5	high	1	

1948	Norway Maple	15	5	moderate	3	suppressed
195	Sugar Maple	15	5	high	1	exposed roots
196	Sugar Maple	15	5	high	1	
197	Sugar Maple	35	10	high	1	stem cankers
198	Sugar Maple	35	15	moderate	2	trunk canker; 5% lean
199	Sugar Maple	15	5	high	1	
200	Sugar Maple	25	10	high	1	
201	Sugar Maple	15	5	high	2	stem bent; not tagged
202	Basswood	50	15	moderate	3	bent crown; 5% lean; not tagged
203	Sugar Maple	35	10	high	2	forked trunk; not tagged
204	Sugar Maple	30	10	moderate	2	trunk canker; not tagged
205	Sugar Maple	15	5	high	1	not tagged
206	Sugar Maple	25	10	high	2	5% lean; trunk bent; not tagged
207	Black Maple	20	10	high	1	not tagged
208	Sugar Maple	35	15	high	1	not tagged
209	Sugar Maple	35	15	moderate	2	bent trunk; 5% lean; not tagged
210	Sugar Maple	35	15	low	3	90% dead; not tagged
211	Norway Maple	30	10	high	1	
212	Sugar Maple	10	5	high	2	3-trunked; basal clumping
213	Black Cherry	15	5	moderate	3	crooked trunk; exposed roots
214	Butternut	20	5	moderate	3	major bark damage; crooked trunk
215	Sugar Maple	10	5	high	1	
216	Black Walnut	25	10	high	2	1-sided crown
217	Manitoba Mapl	25	10	moderate	3	basal clumping; 2-trunked; 1-sided crown
218	Black Walnut	20	10	moderate	1	moderate slope
219	Norway Maple	25	10	high	3	moderate slope; basal clumping; 2-trunked; croo
220	Black Locust	30	10	low	3	exposed roots; steep slope; bark damage
221	Red Elm	30	10	high	2	leaf-skeletonizer
222	Sugar Maple	15	5	high	2	grape vines throughout crown
223	Sugar Maple	30	10	high	1	
224	White Ash	15	5	high	2	expose roots
225	Norway Maple	20	10	high	2	vines in crown; exposed roots
226	Sugar Maple	15	5	high	1	vines in crown
227	Black Walnut	90	15	high	1	
228	Sugar Maple	15	5	high	2	1-sided crown
229	Black Walnut	20	5	high	1	
230	Black Locust	50	10	low	3	crown 50% dead; snags in crown
231	Black Locust	40	10	low	3	crown 50% dead; snags in crown
232	White Ash	20	5	high	2	trunk crooked, leaning
233	Sugar Maple	20	5	high	2	1-sided crown
234	Sugar Maple	20	10	high	1	
235	Black Locust	120	15	moderate	3	forking with split trunk; broken crown
236	Sugar Maple	20	10	high	1	
237	Sugar Maple	20	10	high	2	crooked trunk
238	Black Locust	50	10	moderate	3	crooked trunk
239	Sugar Maple	10	5	high	2	1-sided crown
240	Black Locust	50	10	moderate	3	bark damage; crooked trunk; exposed roots
241	Sugar Maple	20	5	high	2	crooked trunk
242	Sugar Maple	60	10	moderate	3	trunk damage, rot, split
243	Sugar Maple	25	10	high	1	
244	Horse Chestn	40	10	moderate	3	broken crown; epicormic shoots; snag in tree
245	Norway Maple	40	15	high	1	
246	White Ash	35	10	high	2	
247	Sugar Maple	35	10	high	2	cracked trunk (healing)
248	Horse Chestn	40	10	high	1	
249	Horse Chestn	60	15	high	2	broken crown
250	Sugar Maple	15	5	high	1	
251	Norway Maple	35	10	high	3	10% lean; 1-sided crown
252	Norway Maple	20	10	high	3	exposed roots; 10% lean; 1-sided crown
253	Sugar Maple	20	5	high	1	
254	Sugar Maple	30	10	high	2	bent trunk
255	Black Locust	50	10	low	3	broken crown; cracked trunk
256	Black Locust	40	10	low	3	broken crown; cracked trunk
257	Red Elm	60	15	high	1	
258	Sugar Maple	15	5	high	2	1-sided crown
259	Sugar Maple	15	5	high	2	1-sided crown
260	Sugar Maple	10	5	high	3	1-sided crown
261	Horse Chestn	80	15	moderate	3	split trunk; 10% lean; dead and broken crown ar
262	Sugar Maple	60	15	high	2	exposed roots

263	Sugar Maple	20	10	high	1	
264	Red Elm	40	10	high	1	exposed roots
265	Sugar Maple	35	10	high	1	
266	Sugar Maple	40	15	high	1	1-sided crown; snag in tree
267	Sugar Maple	45	15	high	1	
268	Sugar Maple	10	5	high	3	lean; bent trunk
269	Red Elm	35	10	high	3	exposed roots; broken crown
270	Norway Maple	40	15	high	1	
271	Norway Maple	60	20	high	1	exposed roots
272	Norway Maple	20	5	high	2	lean; 1-sided crown
273	Sugar Maple	40	15	moderate	2	biological crown damage
274	Norway Maple	50	20	high	2	exposed roots; lean
275	Sugar Maple	30	10	moderate	2	bark damage
276	White Ash	10	5	moderate	1	severe lean; bark damage
277	Sugar Maple	35	10	high	1	vines in crown
278	White Ash	20	5	moderate	3	crown bent and lean; vines in crown
279	Norway Maple	25	10	high	2	1-sided crown
280	Sugar Maple	20	10	high	2	trunk "J" shaped
281	Basswood	50	15	high	1	
282	Basswood	60	20	high	2	lean; 2-trunked
283	Norway Maple	40	15	high	2	lean
284	Sugar Maple	20	5	high	3	basal trunk forking; lean
285	Red Elm	60	15	high	1	2-trunked
286	Sugar Maple	15	10	high	2	
287	White Ash	20	5	high	1	lean
288	Sugar Maple	40	10	moderate	3	fallen tree; new side branch leaders; exposed roots
289	Manitoba Maple	10	5	high	3	under overpass
290	Norway Maple	20	10	high	1	
291	Red Elm	25	10	high	1	
292	White Ash	20	5	high	2	2-trunked
293	White Ash	15	5	low	3	epicormic sprouts on trunk; dying crown
294	Basswood	20	5	low	3	basal clumping; lean
295	Norway Maple	30	10	moderate	3	basal clumping; lean
296						missing tree tag; no tree with this number
297	Basswood	25	10	high	3	basal clumping

EXPLANATION OF CODES

Crown Reserve Increments - 3, 5, 10, 15, 20, 25m

Preservation Priority

- 1 - high to medium biological condition; well developed, balanced crown; well suited for use as a shade tree can survive under existing conditions indefinitely
- 2 - one or more defects in biological or crown condition; marginally suited as a shade tree or screen plantin can survive at least 3-5 years under existing conditions
- 3 - low biological condition, severely damaged/defective, or unsuitable for urban uses; if biologically defective more than 1-3 years under existing conditions is unlikely

Prominent Specimen Trees - highlighted tree numbers

Trees 50 cm greater than 50 cm DBH, PP1 to PP3, with major landscape role

APPENDIX B

Public Consultation for Phase 1: Problem Identification



THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

NOTICE OF STUDY COMMENCEMENT JAMES MOUNTAIN ROAD From St. James Place to Gateview Drive

The Regional Roads Department has identified the need to carry out rehabilitation work for James Mountain Road from St. James Place to Gateview Drive in the City of Hamilton. There are a number of structural problems with the road such as inadequate roadside drainage, deteriorating pavement conditions and unstable embankments which could lead to unsafe conditions. The type and extent of solutions to these problems will be determined through an environmental assessment study.

The environmental assessment study will follow the process described in the Class Environmental Assessment for Municipal Road Projects document for "Schedule C" undertakings. This is a planning process that includes:

- public consultation throughout the study,
- an evaluation of planning and design alternatives,
- identification of social, cultural, natural, economic and transportation environment,
- avoidance or reduction of impacts where possible, and
- monitoring to ensure that commitments to avoid or reduce impacts are carried out.

You are invited to attend a workshop to assist us in the first phase of the study which will include providing an update on the study and seeking input from you in regard to identification of existing problems. The environmental assessment process and opportunities for public involvement will also be discussed. The workshop will be held at:

Hamilton Central Public Library
Meeting Rooms A and B (opposite the Check-out desk on the main floor)
Wednesday, February 15, 1995
7:00 p.m. to 10:00 p.m.

Please pre-register by February 13, 1995, as space is limited (see below contacts and telephone numbers).

If you cannot attend the workshop but want to be involved in the study or to be placed on a mailing list to receive information, please contact:

Gerry Forbes,
Project Manager

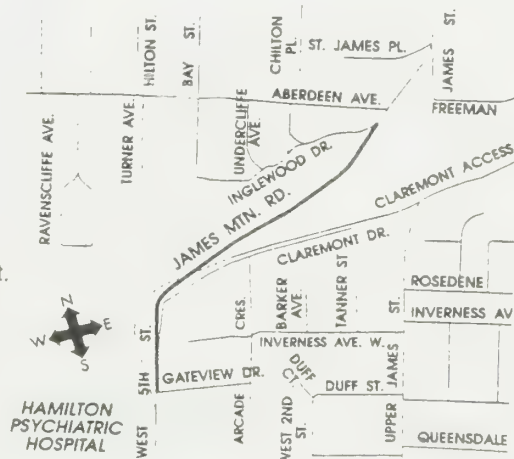
OR

Pam Hubbard,
Environmental
Planner

Special Projects
Office
25 Main Street West,
10th Floor
Hamilton, Ontario

Telephone:
(905) 546-4277

Fax:
(905) 546-2385



SAT Feb 4/95



THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

Transportation / Environmental Services Group

Roads Department
25 Main Street West, Suite 1000
Hamilton, Ontario L8P 1H1

Tel. (905) 546-4277
Tel. (905) 546-4170
Fax (905) 546-2385

Reg. File No.: 60-10-01 , 3

January 27, 1995

1~

ATTENTION:2~

RE:Initiation of Class Environmental Assessment for James Mountain Road Rehabilitation Project

The Regional Municipality of Hamilton-Wentworth Roads Department is initiating a Planning and Design Study for James Mountain Road, from St. James Place at the bottom of the escarpment, to Gateway Drive at the top. Philips Planning and Engineering Limited has been retained to carry out the study.

This project is being planned as a "Schedule C" project, in accordance with the requirements of the Class Environmental Assessment for Municipal Roads - June 1993.

The enclosed map shows the location of the project.

The identified problems are:

- 1) deteriorating pavement
- 2) unstable embankments
- 3) insufficient roadway width to allow for an emergency area
- 4) improper drainage infrastructure.

We would appreciate if you could fill out the attached questionnaire and advise us if you wish to be involved in the project, or if you have any information that would be useful in planning this project.

Figure 1: Catchment Area



Project Start-Up

of the James Mountain Road Project

Winter 1995

A Newsletter by the Roads Department of the Regional Municipality of Hamilton-Wentworth

Background

James Mountain Road is an important mountain access route for Hamilton residents. Over the years, the condition of the access road has deteriorated. Regional staff have identified the need to initiate a study to identify the problems being experienced.

In 1989, a design for the reconstruction of James Mountain Road was prepared. The proposed design included minor realignment, widening of the roadway and construction of a retaining wall on the north side.

Two public information centres were held on August 3, 1989 and January 29, 1990 in which the public commented on the design.

The project was put on hold by Regional Council in anticipation of a Regional Transportation Review.

In the fall of 1994, emergency repairs were made to correct the collapse of an existing wall which threatened a garage below. In addition to slope stability, several other problems are currently being experienced, including:

- problems with drainage during heavy storms, and resultant erosion,
- poor pavement condition, and
- lack of pedestrian access.

We are now required to go forward with the planning for James Mountain Road because of these emergency safety issues. Also, preliminary results of the Regional Transportation Review are available.

Please plan to participate in this study.

Environmental Assessment Process

The planning process for this study will follow the requirements for Class Environmental Assessment for Municipal Road Projects.

This is a planning process that includes:

- Public consultation throughout the study,
- an evaluation of planning and design alternatives,
- identification of social, cultural, natural, economic and transportation environment,
- avoidance or reduction of impacts where possible, and
- monitoring to ensure that commitments to avoid or reduce impacts are carried out.



Public Workshop

The study will commence with a workshop which will give the Public an opportunity to become an integral part of the study.

The project team will be seeking input from you regarding identification of existing problems for the James Mountain Road.

The workshop will also provide the public with an opportunity to ask questions and discuss possible solutions with regional staff.

Please plan to attend this workshop.

Date: Wed., Feb. 15, 1995
Time: 7:00 p.m. - 10:00 p.m.
Location: Hamilton Public Library
(55 York Boulevard),
Meeting Rooms A & B
(Main Floor)

If you cannot attend the workshop but wish to comment, please call:

Gerry Forbes, Project Manager
OR
Pam Hubbard, Environmental
Planner
at 546-4277
Special Projects Office
25 Main St. West, 10th Floor
Hamilton, Ontario
L8P 1H1
Fax No.: 546-2385



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THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
Transportation / Environmental Services Group

Roads Department
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Tel. (905) 546-4170
Fax (905) 546-2385

M E M O R A N D U M

TO: 1 ~

FROM: Gerry Forbes, Project Manager
Special Projects Office
Regional Municipality of Hamilton-Wentworth

DATE: January 27, 1995

REG. FILE NO.: 60-10-01, 2

RE: Class Environmental Assessment for James Mountain Road
Rehabilitation Project, St. James Place to Gateway Drive

The purpose of this memo is to advise you that the Regional Municipality of Hamilton-Wentworth is undertaking a Planning and Design Study for James Mountain Road, from St. James Place to Gateway Drive. Phillips Planning and Engineering has been retained to carry out the study. The project is being planned for the following reasons:

- The existing roadway condition is in an advanced state of deterioration.
- The instability of the side slopes has led to local retaining wall and guide rail failure.
- Safety of vehicular and pedestrian traffic is a concern.
- Roadside drainage is inadequate.

The project is following the process outlined in the Class Environmental Assessment for Municipal Road Projects and has been identified as a Schedule 'C' Project. Consultation will be carried out with stakeholders as described by that process.

It would be appreciated if you could fill in the attached form and let us know if you want to be involved in the project, or if you have any information that would be useful in planning this project.

Page 2

January 27, 1995

**Class Environmental Assessment for James Mountain Road
Rehabilitation Project, St. James Place to Gateway Drive**

A Public Workshop has been scheduled for Wednesday, February 15th, 1995, from 7:00 p.m. to 10:00 p.m., to be held at the Hamilton Public Library, Meeting Rooms A and B.

Please advise us by February 10, 1995, of your interest in the project. Please send your replies to:

Mr. Gerry Forbes, M. Eng., P. Eng.
Regional Municipality of Hamilton-Wentworth
Special Projects Office
25 Main Street West
Hamilton, Ontario
L8P 1H1

Only those who respond, and those directly affected by the undertaking will receive notification during the later stages of Planning and Design.

Thank you for your cooperation.

/kf 

c.c. Ted Gill, Senior Director

Doug Onishi, Director, Design and Construction

Geoff Aston, Director, Programming and Development

Dale Turvey, Commissioner of Transportation/Environmental Services

Mr. George Baker, Chief
Mr. Glen Peace, Assistant Deputy
Chief
Fire Department

Mr. Mike Watson, Manager
Real Estate Division
Property Department

Mr. Reg Meiers, Operation
Engineer
Streets & Sanitation Division
Mr. Jim Pook, Horticulturalist
Horticulture Section
Public Works Department

Mr. Murray Main, Director
Traffic Services
Mr. Hart Solomon
Manager of Traffic Operations
Traffic Department

Betty Matthews-Malone, Manager,
Infrastructure Planning Division
Environmental Services Department

Mr. Bill Hunter,
Public Health Inspection Supervisor
Health Services Department

Mr. Victor Abraham, Director
Local Planning Branch
Mr. William Janssen, Division Head
Policy and Neighbourhood Planning
Planning and Development
Department

LACAC
c/o Nina Chapple, Architectural
Historian
Local Planning Branch
Planning and Development
Department

Mr. William Pearce, Division Head
Strategic Planning Division
Planning and Development
Department-
**Environmentally Sensitive Areas
Impact Evaluation Group**

Chief Robert Middaugh
Sgt. John Kenyon, Operation
Planning
Police Department (Regional)

Mr. William O'Brien, Director
Transportation Services
Hamilton Street Railway

**THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
JAMES MOUNTAIN ROAD STABILIZATION PROJECT
CLASS ENVIRONMENTAL ASSESSMENT STUDY**

TYPE(S) OF INVOLVEMENT

Please specify how you would like to be kept informed of this project:

- ☐ No further involvement necessary.
- ☐ Keep informed about the progress and status of the project, through minutes of external team meetings.
- ☐ Active involvement in the assessment of the alternatives and/or discussions on this project. Willing to attend external team meetings.
- ☐ Want to comment on the decisions made, however, do not need to participate in meetings.
- ☐ Want to be notified of public information centres.
- ☐ Other (Please specify).

ADDITIONAL INFORMATION

Please list any projects that your agency is planning to carry out that may impact or be impacted by this project.

<input type="checkbox"/>	Mapping (please specify)	<input type="checkbox"/>	Site Specific Reports
<input type="checkbox"/>	Technical Studies	<input type="checkbox"/>	Other (please specify)
	<input type="checkbox"/> Physical	<input type="checkbox"/> Cultural	
	<input type="checkbox"/> Biological	<input type="checkbox"/> Economic	
	<input type="checkbox"/> Social		

CONCERNS/COMMENTS:

NAME:

AGENCY:

ADDRESS:



SECTION OF ROADWAY UNDER REVIEW



THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

Transportation / Environmental Services Group

Roads Department
25 Main Street West, Suite 1000
Hamilton, Ontario L8P 1H1

Tel. (905) 546-4277
Tel. (905) 546-4170
Fax (905) 546-2385

Reg. File No.: 60-10-01, 3

January 27, 1995

1~

ATTENTION:2~

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This project is being planned as a "Schedule C" project, in accordance with the requirements of the Class Environmental Assessment for Municipal Roads - June 1993.

The enclosed map shows the location of the project.

The identified problems are:

- 1) deteriorating pavement
- 2) unstable embankments
- 3) insufficient roadway width to allow for an emergency area
- 4) improper drainage infrastructure.

We would appreciate if you could fill out the attached questionnaire and advise us if you wish to be involved in the project, or if you have any information that would be useful in planning this project.

3~

Page 2

January 27, 1995

**Initiation of Class Environmental Assessment
for James Mountain Road Rehabilitation Project**

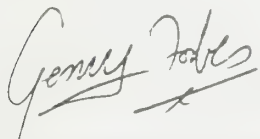
Please advise us of your interest in the project by February 10, 1995. Please send your replies to:

Mr. Gerry Forbes, M. Eng., P. Eng.
Regional Municipality of Hamilton-Wentworth
Special Projects Office
25 Main Street West
Hamilton, Ontario
L8P 1H1

Only those who respond within the specified time frame, and those directly affected by the undertaking will receive notification during later stages of Planning and Design.

Thank you for your co-operation.

Yours truly,

A handwritten signature in cursive script, appearing to read "Gerry Forbes", with a horizontal line underneath.

G. J. Forbes, M. Eng., P.Eng.
Project Manager

/kf

Niagara Escarpment Commission
232 Guelph Street
Georgetown, Ontario
L7G 4B1
Marion Plaunt, Senior Planner

Ministry of Community and Social Services
119 King Street West, 6th Floor
P.O. Box 2112
Hamilton, Ontario L8N 3Z9
Mr. D. Cornish, Area Manager

Ministry of Culture, Tourism and Recreation
Development Plans Review
55 Centre Street
London, Ontario N6J 1T4
Neal Ferris, Review Officer

Central Ambulance Communications Centre
Henderson General Division
711 Concession Street
Hamilton, Ontario L8N 3R9
P. McDonnell

Ministry of Environment and Energy
Approval and Planning Section
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Hamilton, Ontario L8N 3Z9
Alison Braithwaite

Ministry of Natural Resources
Niagara District
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Fonthill, Ontario
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Felix Barbetti, Supervisor

Ministry of Municipal Affairs
Cambridge Regional Office
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Linda Tennant, Acting Manager

Ministry of Transportation Ontario
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Dan Wardell

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Mr. Alf Roth

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L8N 3L1

Pat Gillie, Superintendent

Hamilton-Wentworth Roman Catholic Separate School Board
90 Mulberry Street
P.O. Box 2012
Hamilton, Ontario L8N 3R9
Edd Gera

Hamilton Region Conservation Authority
838 Mineral Springs Road
P.O. Box 7099
Ancaster, Ontario L9G 3L3
B. Scott Konkle, Director

LACAC: City of Hamilton
71 Main Street West
Hamilton, Ontario
L8N 3T4
Nina Chapple, Architectural Historian

**THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
JAMES MOUNTAIN ROAD STABILIZATION PROJECT
CLASS ENVIRONMENTAL ASSESSMENT STUDY**

TYPE(S) OF INVOLVEMENT

Please specify how you would like to be kept informed of this project:

- ☐ No further involvement necessary.
- ☐ Keep informed about the progress and status of the project, through minutes of external team meetings.
- ☐ Active involvement in the assessment of the alternatives and/or discussions on this project. Willing to attend external team meetings.
- ☐ Want to comment on the decisions made, however, do not need to participate in meetings.
- ☐ Want to be notified of public information centres.
- ☐ Other (Please specify).

ADDITIONAL INFORMATION

Please list any projects that your agency is planning to carry out that may impact or be impacted by this project.

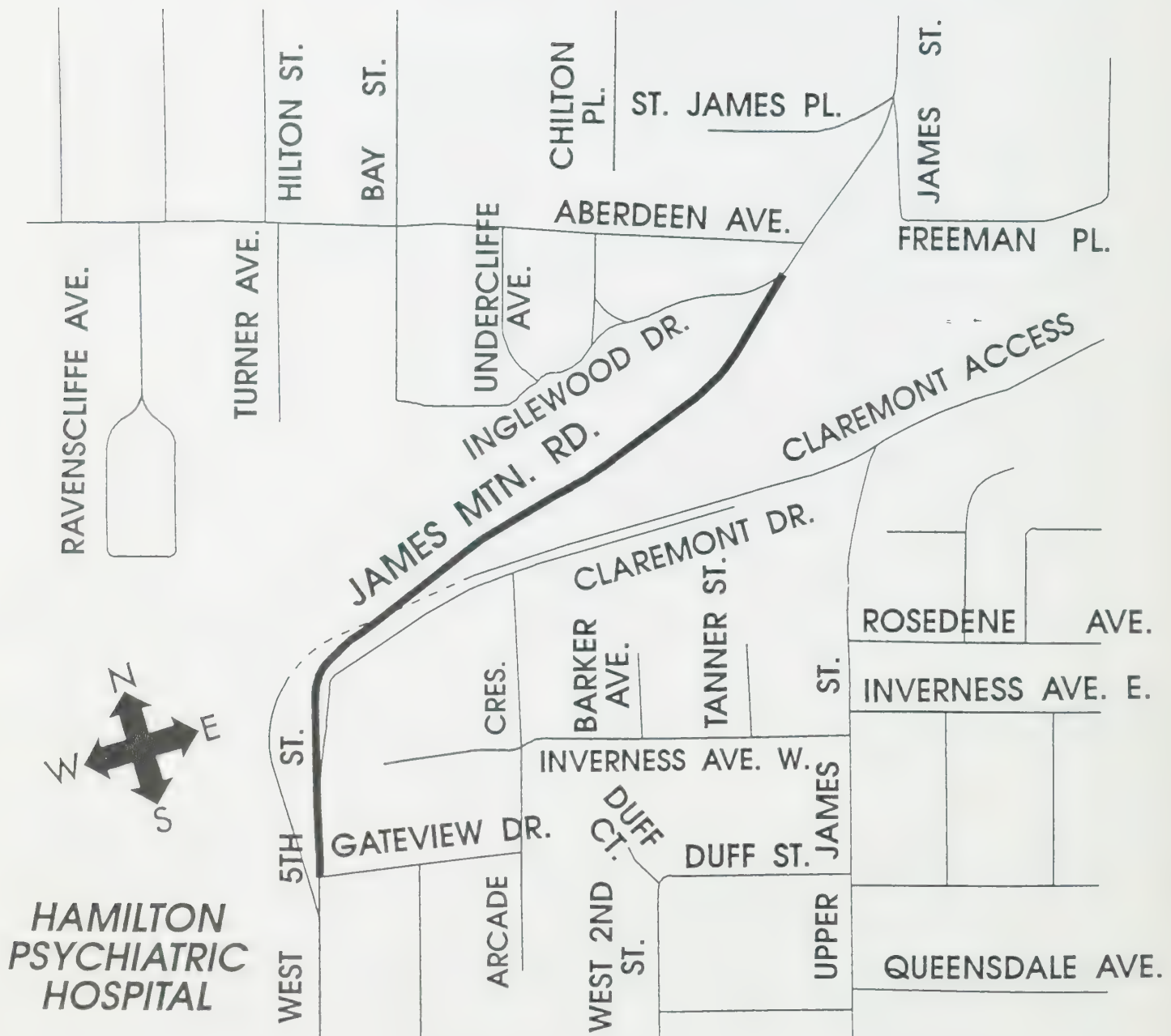
<input type="checkbox"/>	Mapping (please specify)	<input type="checkbox"/>	Site Specific Reports												
<input type="checkbox"/>	Technical Studies	<input type="checkbox"/>	Other (please specify)												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%; text-align: center;"><input type="checkbox"/></td> <td style="width: 25%; padding: 5px;">Physical</td> <td style="width: 5%; text-align: center;"><input type="checkbox"/></td> <td style="width: 25%; padding: 5px;">Cultural</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 5px;">Biological</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 5px;">Economic</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 5px;">Social</td> <td></td> <td></td> </tr> </table>	<input type="checkbox"/>	Physical	<input type="checkbox"/>	Cultural	<input type="checkbox"/>	Biological	<input type="checkbox"/>	Economic	<input type="checkbox"/>	Social				
<input type="checkbox"/>	Physical	<input type="checkbox"/>	Cultural												
<input type="checkbox"/>	Biological	<input type="checkbox"/>	Economic												
<input type="checkbox"/>	Social														

CONCERNS/COMMENTS:

NAME:

AGENCY:

ADDRESS:



SECTION OF ROADWAY UNDER REVIEW



THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

Transportation / Environmental Services Group

Roads Department
25 Main Street West, Suite 1000
Hamilton, Ontario L8P 1H1

Tel. (905) 546-4277
Tel. (905) 546-4170
Fax (905) 546-2385

MEMORANDUM

TO: Regional Councillors
FROM: Pamela Hubbard *[Signature]*
SUBJECT: James Mountain Road
Class Environmental Assessment

YOUR FILE:
OUR FILE: 60.10.01.2
PHONE: 2388
DATE: January 31, 1995

Attached please find a newsletter advertising the start of the above environmental assessment project. The newsletter is being sent to approximately 600 residents and property owners in the vicinity of this section of the road as well as a number of interest groups, agencies, and City and Regional Departments.

The first opportunity for a public forum will be a workshop at the Central Public Library on Wednesday, February 15, 1995 from 7:00 to 10:00 p.m.. It will be advertised in the Hamilton Spectator on Saturday, February 4, 1995, and Wednesday February 8, 1995, as well as in the Mountain News on Wednesday, February 1, 1995.

If you have any questions on the project please contact me at 546-2388 or Gerry Forbes, Project Manager at 546-2433.

Attach.

Distribution List

- | | |
|-----------------------------|-------------------------------|
| 1. T.Cooke, Chairman | 3. Mayor R. Morrow |
| 4. Mayor A. Bain | 6. Mayor J. Addison |
| 7. Mayor T. McMeakin | 9. Councillor M. Caplan |
| 10. Councillor M. Kiss | 12. Councillor W. McCulloch |
| 13. Councillor D. Drury | 15. Councillor G. Copps |
| 16. Councillor D. Wilson | 18. Councillor F. Eisenberger |
| 19. Councillor T. Jackson | 21. Councillor H. Merling |
| 22. Councillor T. Anderson | 24. Councillor D. Ross |
| 25. Councillor J. Prentice | 27. Councillor A. Sloat |
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| 14. Councillor B. Morelli | |
| 17. Councillor D. Agostino | |
| 20. Councillor R. Charters | |
| 23. Councillor F. D'Amico | |
| 26. Councillor D. Braden | |
| 29. Councillor G. Shaw | |

JAMES MOUNTAIN ROAD Project

Public Workshop

Wednesday, February 15, 1995

7:00 p.m. - 10:00 p.m.

Hamilton Public Library

Meeting Rooms A & B

***Regional Municipality
of Hamilton-Wentworth
Roads Department***

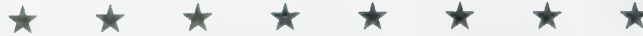


***Philips Planning and
Engineering Limited***



INTRODUCTION

James Mountain Road Project



The Roads Department is carrying out an environmental assessment at James Mountain Road. This package provides some 'information' on:

- ▶ the background to the project;
- ▶ the issues and problems that have been identified to date;
- ▶ the environmental assessment process; and,
- ▶ the Regional Transportation Review.

A comment sheet is located at the back of the package. If you have comments on the project, we would appreciate if you could fill out the comment sheet and return it to the Special Projects Office (address noted below).

If you have questions or comments, please feel free to contact:

Gerry Forbes, Project Manager

or

Pamela Hubbard, Environmental Planner

Special Projects Office

25 Main Street West, 10th Floor

Hamilton, Ontario L8P 1H1

Telephone: (905) 546-4277

Fax: (905) 546-2385

A G E N D A

James Mountain Road Project

Public Workshop

Wednesday, February 15, 1995

7:00 p.m. - 10:00 p.m.

Hamilton Public Library, Meeting Rooms A & B

★ ★ ★ ★ ★ ★ ★ ★

Purpose: To bring the public up-to-date on the project;
explain opportunities for public involvement in the
environmental assessment process; and,
determine the issues to be addressed in the study.

1. Introduction
2. Purpose of Meeting
3. Overview of Agenda
4. Background Review
5. Review of Regional Transportation Review and Vision 20/20
6. Review of Environmental Assessment Process
7. Review of Issues
8. Open Discussion
9. Wrap-Up Comments
10. Continuation of Process
11. Closing Remarks



JAMES MOUNTAIN ROAD

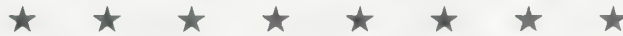


Scale



B A C K G R O U N D

James Mountain Road Project



In 1988, the Regional Municipality of Hamilton-Wentworth retained the firm of Philips Planning and Engineering Limited to carry out a functional design, leading to the detailed design and contract preparation, for the stabilization of James Mountain Road from Inglewood Drive to Gateview Drive.

Field surveys were carried out and base plans were prepared. A property survey was also carried out to establish the limits of the existing right-of-way. Input was requested into the process from the various commenting agencies such as the Hamilton Region Conservation Authority, Niagara Escarpment Commission, Ministry of Natural Resources, as well as the various City and Regional Departments.

The problems identified in 1988 were:

- ▶ ***problems with drainage and erosion during heavy storms***
- ▶ ***poor pavement condition***
- ▶ ***lack of a safe area for pedestrians***
- ▶ ***the stability of the existing slope***

The functional design investigated several alternatives, all of which were based on the premise that two lane, two way traffic, would be maintained. As well, it was understood that the uphill escarpment face would not be altered. This led to the conclusion that widening of the embankment would be necessary, and that in order to do that, some type of retaining wall system would be required.

The results of the study were communicated to the Public by means of two Public Information Centres held on August 3, 1989 and January 29, 1990.

Several concerns were expressed by the Public. Some were specific, with respect to the effect of this project on existing walls and properties, while others expressed concerns of the effect of the project on the natural environment and the possible disruption during construction. Two groups expressed concern that the focus of the study was too narrow, indicating that further studies into traffic on an escarpment wide basis were necessary.

As a result of the Public's concerns, Regional Council, on February 6, 1990, adopted a motion to delay the James Mountain Road Project until a study assessing all mountain accesses in the City of Hamilton was complete.

In the fall of 1994, following the collapse of a small retaining wall adjacent to James Mountain Road, and further deterioration of the slopes, Regional Council adopted a motion authorizing staff to proceed with the study of the James Mountain Road.

REGIONAL TRANSPORTATION REVIEW

PEAK HOUR TRAVEL DEMAND ACROSS NIAGARA ESCARPMENT:

	<u>WEST ESCARPMENT</u>	<u>CENTRAL ESCARPMENT</u>	<u>EAST ESCARPMENT</u>
EXISTING ROAD CAPACITY	4,400 VPH	8,200 VPH	2,200 VPH
1991 ESTIMATED PEAK HOUR TRAVEL DEMAND	2,900 VPH	7,000 VPH	1,900 VPH
2001 FORECAST	4,000 VPH	7,100 VPH	4,200 VPH
2021 FORECAST (TRENDS SCENARIO)	6,700 VPH	8,400 VPH	5,200 VPH
2021 FORECAST (VISION 2020 SCENARIO)	5,100 VPH	6,600 VPH	4,400 VPH

REGIONAL TRANSPORTATION REVIEW

LAND USE FORECASTS:

	<u>POPULATION</u>	<u>EMPLOYMENT</u>
1991	451,000	195,000
2001	498,000	224,000
2021	566,000	259,000

- POPULATION GROWTH WILL BE PRIMARILY ABOVE ESCARPMENT (HAMILTON MOUNTAIN, STONEY CREEK MOUNTAIN, ANCASTER, WATERDOWN).
- EMPLOYMENT GROWTH WILL BE WIDELY DISTRIBUTED BUT MAJOR CONCENTRATION OF JOBS (70%) WILL STILL BE IN HAMILTON LOWER CITY.

REGIONAL TRANSPORTATION REVIEW

TRAVEL FORECASTS:

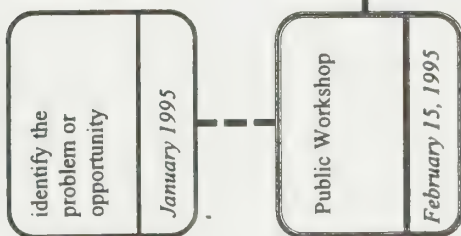
	<u>A.M. PEAK HOUR</u>	
	<u>AUTO TRIPS</u>	<u>TRANSIT TRIPS</u>
1991	61,700	7,200
2001	72,300	8,000
2021 TRENDS SCENARIO	105,300	8,300
2021 VISION 2020 SCENARIO	79,000	16,000

- UNDER CURRENT TRENDS AUTO TRIPS WOULD INCREASE BY 70% IN NEXT 25 TO 30 YEARS.
- UNDER VISION 2020 SCENARIO TRANSIT, WALKING AND CYCLING ASSUME MUCH GREATER SHARE OF PEAK TRAVEL. AUTO TRIPS WOULD STILL INCREASE BY 25% IN NEXT 25 TO 30 YEARS.

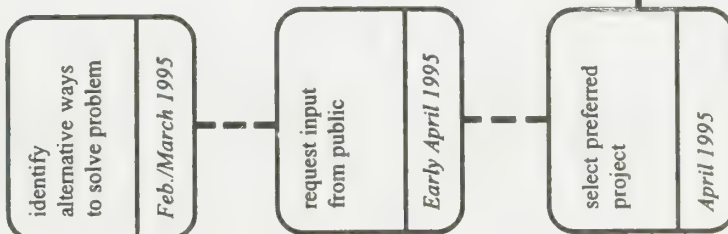
Proposed Study Schedule

James Mountain Road

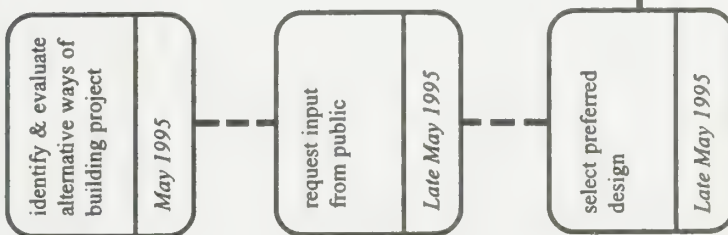
Phase 1



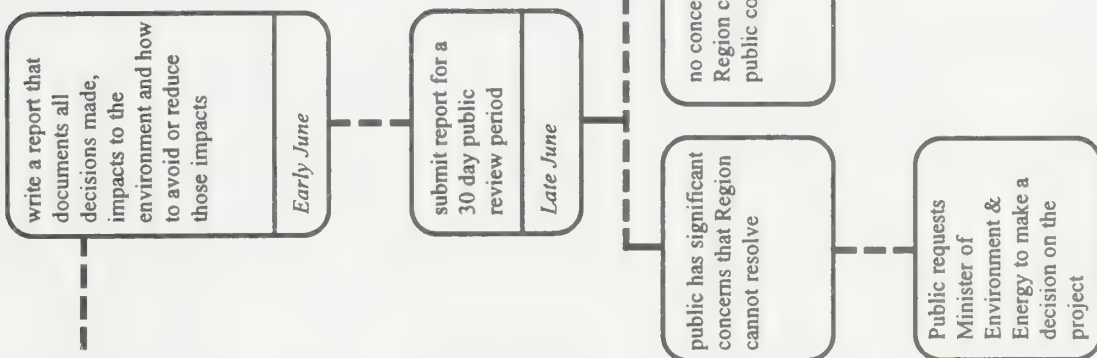
Phase 2



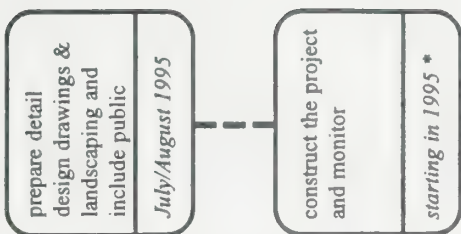
Phase 3



Phase 4



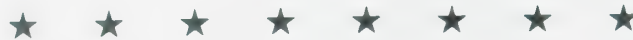
Phase 5



* subject to approvals and availability of funding

REVIEW OF ISSUES

James Mountain Road Project

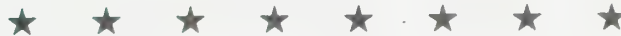


The following issues have been identified:

- ▶ A lack of adequate storm drainage has resulted in local flooding and erosion.
- ▶ Deteriorating pavement condition has led to concerns for safety.
- ▶ The stability of the existing side slopes has led to concerns for the stability of the road base.
- ▶ The lack of a safe place for pedestrians.
- ▶ The lack of an emergency area for disabled vehicles.
- ▶ Guide rails are deteriorating, causing safety concerns.
- ▶ An existing retaining wall has recently collapsed, damaging an adjacent garage structure.
- ▶ Adjacent retaining walls, similarly, are in danger of collapse.
- ▶ The effect of construction on the natural environment.
- ▶ The effect of construction on adjacent residences, from a noise and aesthetic point-of-view.

NEXT STEPS

James Mountain Road Project



1. Inventory Environment

- ▶ trees and other vegetation

2. Technical Analyses

- ▶ traffic
- ▶ geotechnical/slope stability
- ▶ stormwater drainage

3. Develop Solutions

- ▶ analysis of problems and development of feasible options
- ▶ evaluation of options

4. Public Consultation

- ▶ to provide input into solutions and evaluation
- ▶ how will it occur?
 - ▶ open house, showing options and evaluation, with staff available to answer questions
 - ▶ workshop to evaluate options and make recommendation to Roads Department
 - ▶ public meeting/open house with presentation by staff—an opportunity to view displays and ask questions to staff

*Are there any other ways that you or your group would like to be involved in this project?
Please let us know!*

COMMENT SHEET

APPENDIX C

Public Consultation for Phase 2: Planning Solutions



THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

NOTICE OF PUBLIC WORKSHOP CLASS ENVIRONMENTAL ASSESSMENT JAMES MOUNTAIN ROAD PROJECT (from Gateview Drive to St. Joseph's Drive)

The Roads Department is carrying out a study of James Mountain Road as per the "Class Environmental Assessment for Municipal Roads Projects" document. The purpose of the study is to identify improvements that should be made to the road and to develop a plan for the road that minimizes impacts to the environment. At the first public workshop (held in February) participants identified a number of problems with the road and suggested some solutions. Since then, these problems and solutions have been evaluated by the Roads Department.

As a result of public input, the study boundaries have been extended north to St. Joseph's Drive. The study will now include, in addition to other issues, a review of solutions to traffic operations including the left turns onto Markland Street.

A second public workshop will be held on:

Date: Wednesday, April 12, 1995

Time: 7:00 - 9:00 p.m.

Place: Central Public School Gymnasium
119 Hunter Street West
(Entrance & Parking off Bay Street)

Purpose: opportunity for public to review and comment on the evaluation of problems and solutions.

Following this workshop, the Roads Department will recommend the solutions that should be carried forward into design. If you cannot attend the workshop but wish to obtain information or submit written or verbal comments about the study at any time, please contact:

Gerry Forbes, Project Manager

or

Pamela Hubbard, Environmental Planner

Special Projects Office

25 Main Street West

Hamilton, Ontario L8P 1H1

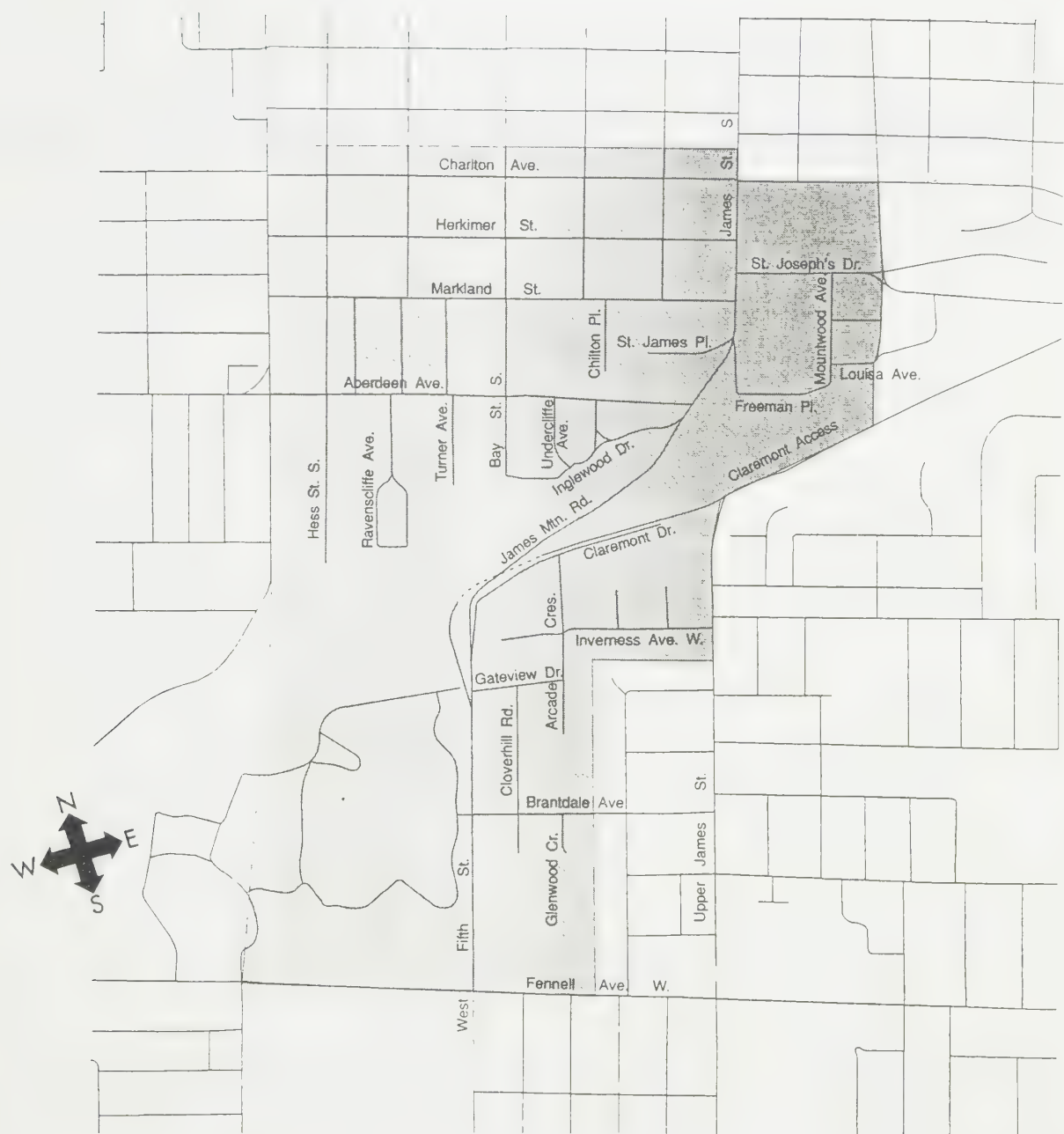
Ph: (905) 546-4277

Fax: (905) 546-2385



SECTION OF ROADWAY UNDER REVIEW

Figure 1: Catchment Area



Circularization Area

Total No. Circulated = 2029

Project Update

of the James Mountain Road Project

Spring 1995

A Newsletter by the Roads Department of the Regional Municipality of Hamilton-Wentworth

Issue No. 1

The Roads Department is carrying out a study of James Mountain Road under the Environmental Assessment process. The purpose of the study is to identify improvements that should be made to the road and to develop a plan for the road that incorporates these improvements.

The public attended a workshop on February 15, 1995 to be introduced to the study and to take the opportunity to become an integral part of the study. The workshop provided the public with an opportunity to comment on problems that the Roads Department had identified, to make the Region aware of other existing problems and to suggest potential ways of addressing these problems.

The workshop was considered to be successful because those who attended provided meaningful input to the Region with respect to their ideas and concerns with the James Mountain Road project.

Thank you to those who attended and voiced their ideas, concerns and/or provided written comments. We also received a number of phone calls from the public.

What You Told Us

In addition to confirming the problems of slope instability, poor drainage, poor pavement conditions and a lack of pedestrian access, you related the following problems:

- poor drainage and unsatisfactory traffic operations at the bottom of the escarpment extend past the limits of our study to at least St. Joseph's Drive;
- the roadway does not provide an acceptable level of traffic safety;
- drivers are consistently speeding;
- there is a lack of personal safety for pedestrians who use the relatively isolated stairs; and the stairs are not accessible for everyone.

You suggested the following potential solutions:

- place James Mountain Road in a tunnel or select an alternative route to the present alignment;
- build an escape ramp at the bottom of the escarpment for drivers who lose control during their descent;
- provide "pull out bays" to accommodate stalled or disabled vehicles rather than widening the entire road; and
- request speed enforcement by the Regional Police.

Overall, the participants agreed that the road should be reconstructed to address the problems and that it should be done in the following way:

- cut down as few trees as possible;
- trees that must be felled should be left in place to support the remaining ecosystem;
- maintain the country look and feel to the road; and
- if retaining walls are required make them as attractive as possible.

These issues will be considered when evaluating the planning solutions and design alternatives.

Where Do We Go From Here?

As a direct result of your input the Region has already:

- extended the northern limits of the study to St. Joseph's Drive; and
- requested enforcement of the speed limit by the Hamilton Wentworth Regional Police.

As a result of the extension of the study limits this project will now consider the intersection of James and Markland Streets. Recently, the City of Hamilton's Transport and Environment Committee requested Regional staff to conduct a public meeting to address the part time 'no



Printed on Recycled Paper

left turn' at this location. During the next workshop, staff will show an analysis of various options at this intersection and will present a preferred concept. We look forward to your comments, which will be incorporated in a report back to the Committee.

The next step in the Environmental Assessment process is to present to you the planning solutions that the Region has evaluated and to request your input.

Workshop #2

In this project we want to provide you with the opportunity to work with us to establish a plan that meets the community needs as well as the Regional road needs. Please plan to attend a workshop to discuss planning solutions on:

Date: Wednesday April 12, 1995
Time: 7:00 - 9:00 p.m.
Location: Central Public School
 Gymnasium
 119 Hunter St. West
 (parking lot and gym
 entrance off Bay St.)

The workshop will have the following format:

7:00 p.m.

- 1) brief presentation by staff to provide an update on the project and introduction of the problems associated with the revised study limits.

7:15 p.m.

- 2) *James Mountain Road* problems and solutions, how they have been evaluated.
 - traffic and road design issues
 - pedestrian access
 - slope stability and
 - drainage

A discussion period will follow each point.

- 3) *Traffic Operations at the bottom of James Mountain Rd.*
 - left turns from James St. onto Markland St.

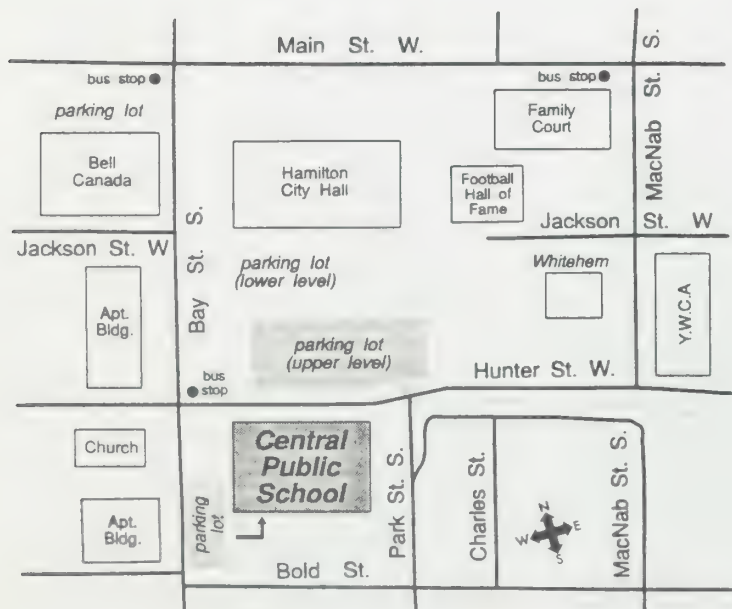
8:15 p.m.

- 4) opportunity for the public to talk with staff about specific issues.

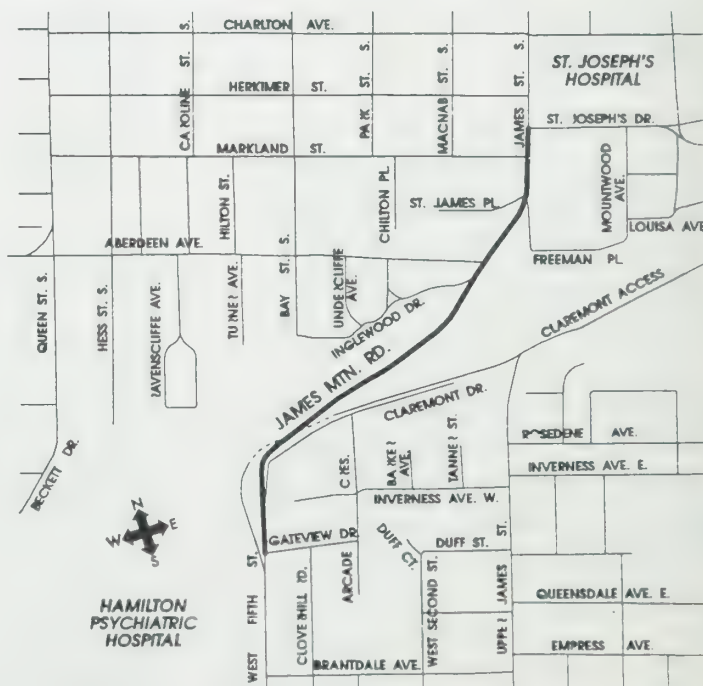
If you have any questions or comments on this project call:

Gerry Forbes,
Project Manager
 or
Pam Hubbard,
Environmental Planner
 at 546-4277
Roads Department
Special Projects Office
25 Main Street West, 10th Floor
Hamilton, Ontario
L8P 1H1
Fax No. 546-2385

Location Of Workshop



Study Area





THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

Transportation / Environmental Services Group

Roads Department
25 Main Street West, Suite 1000
Hamilton, Ontario L8P 1H1

Tel. (905) 546-4277
Tel. (905) 546-2453
Fax (905) 546-2385

MEMORANDUM

TO: see distribution list

FROM: Pamela Hubbard
Environmental Planner

SUBJECT: James Mountain Road
Public Workshop # 2

YOUR FILE:

OUR FILE: 60.10.01.2 & 3

PHONE: (905) 546-2388
DATE: March 31, 1995

Attached please find a Project Update for the above project. It includes a notice for the next public workshop. Please feel free to attend the workshop if you wish to hear the issues raised by the public or to participate as an agency/department representative.

The purpose of the workshop is to present an evaluation of the solutions to various problems. For each set of problems, a preferred solution has been identified. Following the workshop, the Special Projects Office intends to confirm whether the preferred solutions will be carried forward into the design stage and to hold a Study Team meeting to discuss design alternatives. The Study Team includes those agencies/departments that requested active involvement in the project.

ph:

Glen Peace, Assistant Deputy Chief
Fire Department

Rick Buckle
Real Estate Division
Property Department
City of Hamilton

Reg Meiers, Operations Engineer
Streets & Sanitation Division
Public Works Department
City of Hamilton

Hart Solomon
Manager of Traffic Operations
Traffic Department
City of Hamilton

Betty Matthews-Malone, Manager,
Infrastructure Planning Division
Environmental Services Department

Mary Lou Tanner
Local Planning Branch
Planning and Development Dept.
City of Hamilton

Environmentally Sensitive Areas
Impact Evaluation Group
Coordinator
c/o Bill Pearce
Regional Planning
Planning and Development Dept.

Chief Robert Middaugh
Sgt. John Kenyon,
Operation Planning
Police Department (Regional)

Jim Dahms
Hamilton Street Railway

Nina Chapple
Architectural Historian
Local Planning Branch
City of Hamilton

Niagara Escarpment Commission
232 Guelph Street
Georgetown, Ontario
N7G 4B1

Marion Plaunt, Senior Planner

Ministry of Natural Resources
Niagara District
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Fonthill, Ontario
L8N 1E6

Felix Barbetti, Supervisor

Bell Canada
66 Bay Street South, 7th Floor
Hamilton, Ontario
L8N 3H2

Marion Brusey

Hamilton Board of Education
100 Main Street West
Hamilton, Ontario
L8N 3L1

Pat Gillie, Superintendent

Ministry of Culture, Tourism and
Recreation
Development Plans Review
55 Centre Street
London, Ontario N6J 1T4

Neal Ferris, Review Officer

Ministry of Municipal Affairs
Cambridge Regional Office
150 Main Street
Cambridge, Ontario
N1R 6P9

Linda Tennant, Acting Manager

Hamilton Hydro Electric System
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Hamilton, Ontario
L8N 3E4

Paul Brown

Hamilton-Wentworth Roman
Catholic Separate School Board
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P.O. Box 2012
Hamilton, Ontario L8N 3R9

Edd Gera

Ministry of Environment & Energy
Approval and Planning Section
119 King Street, 12th Floor
P.O. Box 2112
Hamilton, Ontario L8N 3Z9

Alison Braithwaite

Ministry of Transportation Ontario
District #4, Burlington
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1182 North Shore Boulevard East
Burlington, Ontario L7R 3Z9

R. Hamilton

Union Gas Limited
360 Strathearn Avenue North
Hamilton, Ontario
L8N 3A5

Mr. Scott Edmunds

Hamilton Region Conservation
Authority
838 Mineral Springs Road
P.O. Box 7099
Ancaster, Ontario L9G 3L3

Scott Peck, A/Sr. Planner

Downtown Hamilton BIA
P.O. Box 91045
Effort Square Postal Outlet
Hamilton, Ontario
L8N 4K3
Attention: Mr. G. McTaggart

Hamilton and District Chamber of
Commerce
555 Bay Street North
Hamilton, Ontario
L8P 1A2
Attention: Lee Kirkby

Hamilton Naturalists Club
Box 89052
Hamilton, Ontario
L8S 4T4
Attention: Mr. Doug Kay

Social Planning and Research
Council
of Hamilton and District
155 James Street South, 6th Floor
Hamilton, Ontario L8P 3A4
Attention: Mr. Don Jaffray

Mohawk College of Applied Arts &
Technology
P.O. Box 2034
Hamilton, Ontario
L8N 3T2
Attention: Mr. Ron Baskin

Hillfield-Strathallan College
299 Fennell Avenue West
Hamilton, Ontario
L9C 1G3
Attention: Mr. Peter Bradley

Regional Environmental Advisory
Committee
c/o Clerk's Department
119 King Street West, 15th Floor
Hamilton, Ontario L8N 3V9
Attention: Ms. Lynda Sohal

Hamilton Automobile Association
393 Main Street East
Hamilton, Ontario
L8N 1J7

Durand Implementation Committee
104 Aberdeen Avenue
Hamilton, Ontario
L8P 2N8
Attention: Marvin Sheppard

Durand Neighbourhood Association
c/o Helene Fallen
265 MacNab Street South
Hamilton, Ontario
L8P 3E2

Central Area Planning &
Implementation
Committee
#4-245 Bay Street South
Hamilton, Ontario
L8P 3J3
Attention: Russel Elman

Mrs. Helen Szollosy
49 Bruce Park Drive
Hamilton, Ont.
L9A 3G5

Dr. William McCracken
64 Charlton Avenue West
Hamilton, Ont.
L8P 2C1

Miss Anna-Marie Cipriani
81 Skylark Drive
Hamilton, Ont.
L9A 5A9

Sturand Neighbourhood Assoc.
c/o Anton Gudinkas
121 Robinson Street
Hamilton, Ont.
L8P 1Z3

Philip Wood
37 Aberdeen Avenue
Hamilton, Ont.
L8P 2N6

Liam F. Ready
A20-25 Britten Close
Hamilton, Ont.
L9C 4J8

Jean Salvage
27 MacNab Street South #5
Hamilton, Ont.
L8P 3C9

John Lafferty
170 Delmar Drive
Hamilton, Ont.
L9C 1J9

Ron Pfander
181 Napier Street
Hamilton, Ont.
L8R 1S6

Macqueline Winters
Executive Director
Bruce Trail Association
P.O. Box 857
Hamilton, Ont.
L8N 3N9



THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

Transportation / Environmental Services Group

Roads Department
25 Main Street West, Suite 1000
Hamilton, Ontario L8P 1H1

Tel. (905) 546-4277
Tel. (905) 546-2453
Fax (905) 546-2385

MEMORANDUM

TO: T. Anderson, Chairperson
R. Wade, Vice-Chairperson
Transportation Services Committee

YOUR FILE:

FROM:  Pamela Hubbard
Environmental Planner

OUR FILE: 60.10.01.2

SUBJECT: James Mountain Road
Class Environmental Assessment

PHONE: 2388
DATE: March 30, 1995

Attached please find a newsletter advertising the second public workshop for the James Mountain Road project. The newsletter is being sent to approximately 600 residents and property owners in the vicinity of this section of the road as well as a number of interest groups, agencies, and City and Regional Departments. The workshop will be advertised in the Hamilton Spectator on Saturday, April 8, 1995, and Wednesday April 5, 1995, as well as in the Mountain News on Wednesday, April 5, 1995.

Please note that the study boundaries have been extended and now include the traffic operations at the bottom of James Mountain Road including the left turns onto Markland Street.

If you have any questions on the project please contact me at 546-2388 or Gerry Forbes, Project Manager at 546-2433.

Attach.

Distribution List

Councillor M. Caplan
Councillor W. McCulloch
Councillor F. Eisenberger
Councillor F. D'Amico

Councillor M. Kiss
Councillor G. Copps
Councillor H. Merling
Councillor D. Ross

JAMES MOUNTAIN ROAD

Public Workshop #2

Wednesday, April 12, 1995

7:00 p.m. - 9:30 p.m.

Central Public School

119 Hunter Street West

*Regional Municipality
of Hamilton-Wentworth
Environmental Group*



*Philips Planning and
Engineering Limited*



A G E N D A

James Mountain Road Stabilization Project

Public Workshop #2

Wednesday, April 12, 1995

7:00 p.m. - 9:30 p.m.

Central Public School

119 Hunter Street West

★ ★ ★ ★ ★ ★ ★ ★

Purpose: To bring you up-to-date on the project; to present the planning solutions that the Region has evaluated; and to request your input.

1.0 GENERAL

- 1.1 Welcome and Introduction
- 1.2 Purpose of Meeting and Review of Agenda
- 1.3 Review of Environmental Assessment Process
- 1.4 Actions Taken Since Public Workshop No. 1

2.0 JAMES MOUNTAIN ROAD

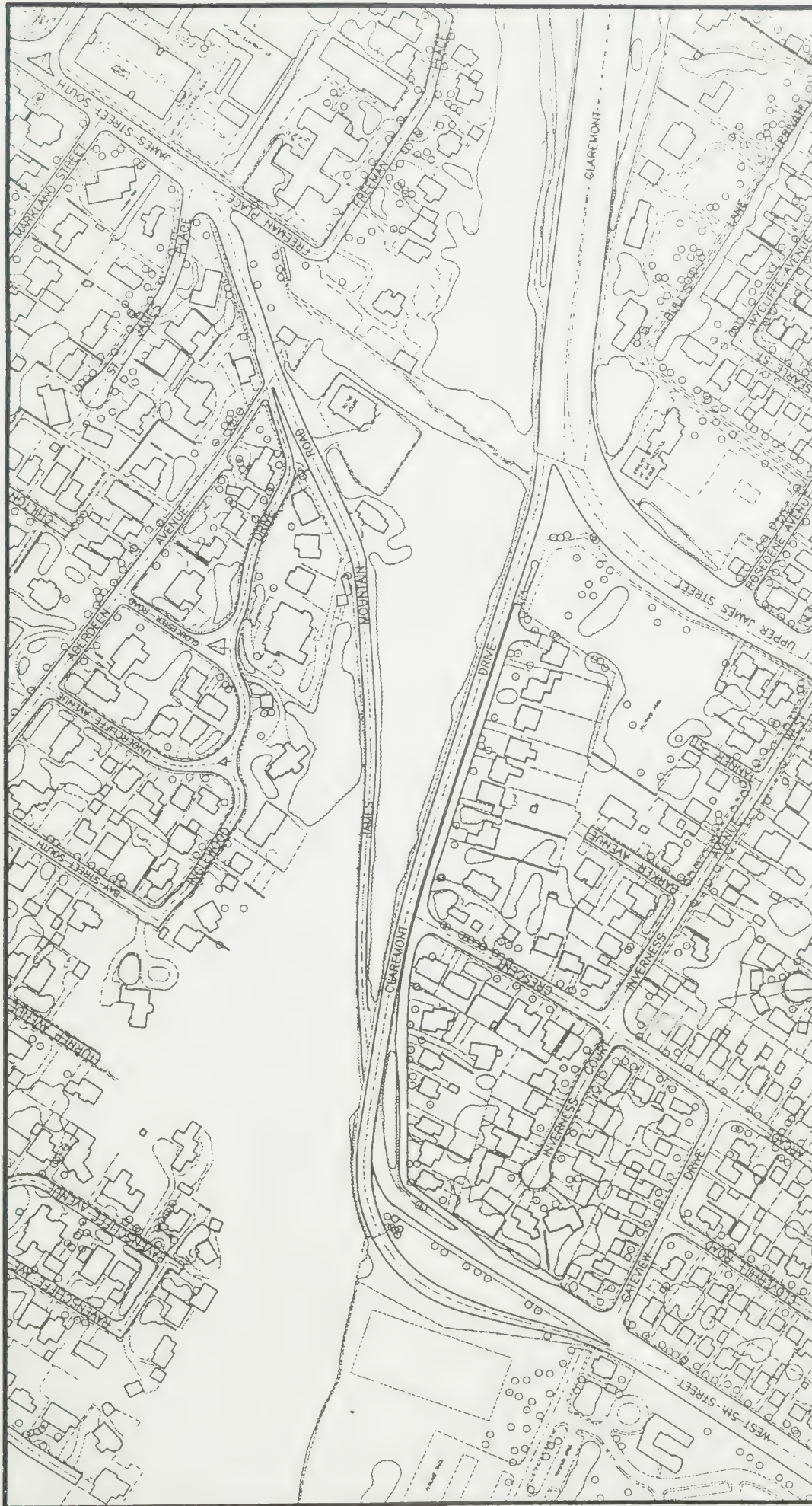
- 2.1 Overview Decision Making Process
- 2.2 Review Public Input to Date
- 2.3 Review of Niagara Escarpment Commission Objectives, and Vision 2020 and Regional Transportation Review Objectives
- 2.4 Evaluation of Potential Planning Solutions
- 2.5 Discussion

3.0 STUDY EXTENSION

- 3.1 Left Turn at Markland Street
- 3.2 Traffic Operations at St. Joseph's Drive
- 3.3 Discussion

4.0 CONCLUDING REMARKS

Please feel free to discuss your concerns with Study Team members in person following the formal presentation.



THE REGIONAL
MUNICIPALITY OF
HAMILTON—WENTWORTH

JAMES MOUNTAIN ROAD



0 10 20 30 40 50m

Scale

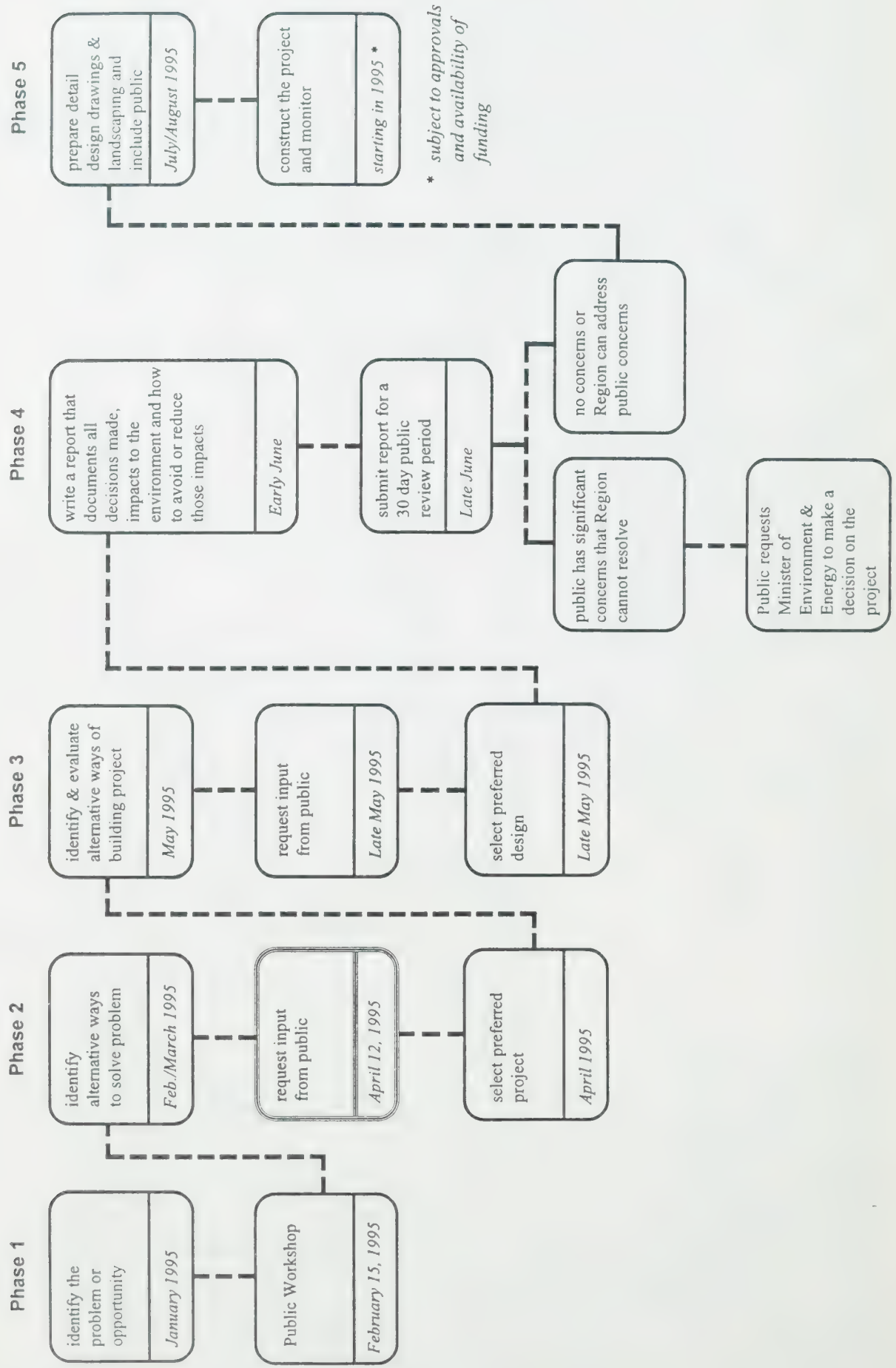


Philips
Planning
Engineering
Limited

Class Environmental Assessment

Proposed Study Schedule

James Mountain Road



JAMES MOUNTAIN ROAD PROJECT
List of Issues Raised by the Public
From Workshop #1, Returned Comment Sheets
and Telephone Contacts
March, 1995

TRAFFIC OPERATIONS & ROAD DESIGN

Problems/Issues:

- serious accidents, safety concerns
- no place for disabled vehicles to pull off
- speeding
- lanes currently too narrow for large vehicles
- traffic is heavy, dirty and noisy
- can we make the road safe without "changing" it, i.e. widening, etc.
- beautiful road to drive, do not destroy the beauty
- concern about blasting
- keep as many trees as possible
- leave any cut down trees on the ground to maintain a balanced ecosystem
- discrimination between Mountain and Lower City (Mountain residents can't easily walk to lower city)
- impact of widening on driveways; should show picture of potential property impacts at #75 James Mountain Road
- concern for how wide the road will be; narrow is good
- request for more frequent bus service on the road

Solutions:

- realign curves to improve safety, particularly at the top
- widen on the uphill side because the City owns this land
- construct a tunnel or re-route the road to the south
- make it one-way or two-way traffic all the time, part-time one-way is confusing
- provide escape ramps
- provide a narrow road to reduce speeding/straight road leads to greater speeds
- provide a short section for buses and slow vehicles to pull over and allow passing (doubles as an emergency lane)
- restrict access to buses and/or pedestrians only (full or part time) and redirect all others to Claremont Access
- increase police enforcement (now) of speeding
- examine other solutions to speeding
- provide signs reminding drivers to slow down
- repair and maintain what's there now (no more no less)

JAMES MOUNTAIN ROAD PROJECT
List of Issues Raised by the Public
From Workshop #1, Returned Comment Sheets
and Telephone Contacts
March, 1995

PEDESTRIAN ACCESS

Problems/Issues:

- pedestrian walkway required
- can road be made safe with pedestrian access improvements ONLY?
- no pedestrians there now, so why build a sidewalk?
- people will walk there if there is a sidewalk
- no signs directing pedestrians/cyclists to stairs
- stairs are too isolated

Solutions:

- be creative or eliminate pedestrian access
- sidewalk (if required) on south side
- cantilevered walk on north side
- elevated or at level of road
- sidewalks could be used to walk bicycles (stairs too steep to carry bikes)
- need to ensure walkways aren't walled in

SLOPE STABILITY

Problems/Issues:

- concern over the size of any retaining walls; unsightly

Solutions:

- vegetation can cover retaining walls; good job on Claremont Access
- retaining wall on uphill side
- if retaining walls required, use a rough surface; attractive
- widen on the uphill side, because less impact of retaining walls (on south side)

DRAINAGE

Problems/Issues:

- drainage is bad all the way to St. Joseph's Drive
- water spills onto roadway from the Scout House's driveway

JAMES MOUNTAIN ROAD PROJECT
List of Issues Raised by the Public
From Workshop #1, Returned Comment Sheets
and Telephone Contacts
March, 1995

STUDY EXTENSION:

Problems/Issues:

- serious accidents/safety concerns
- speeding
- congestion at James & St. Joseph's, and at James & Markland
- need to alleviate weaving at the bottom
- there is no direction as to who has the right-of-way when merging upbound
- extend study limits to St. Joseph's Drive to address drainage and traffic problems
- catchbasins on James Street aren't located in right place

Solutions:

- improve flow of right turn lanes at James & St. Joseph's
- rethink entrance to Fontbonne parking garage
- increase police enforcement (now) of speeding
- examine other solutions to speeding

GENERAL COMMENTS:

- concern for cost
- concerned with Philips not reflecting residents' interests since they designed the earlier project
- request that a NEC representative attend future public meetings
- wish councillors had listened to public in 1989 and something had been done to the road at that time

ACCIDENT HISTORY (1988-1994)

JAMES MOUNTAIN ROAD St. Joseph's Drive to Gateview Drive

Total Number of Accidents - 97 or an average of 13.9 accidents per year

Number of Fatal Accidents - 1

Number of Accidents
Involving Pedestrians - 3

In order to compare the level of safety of this road to others, we must consider the volume of traffic and the distance travelled by these vehicles.

Therefore: - On James Mountain Road, every time one million vehicles each travel one kilometre, there is an average of 3.15 accidents.

- The average rate for all City of Hamilton arterial roadways (from 1989 to 1993) is 2.26 accidents.

77% of the accidents on James Mountain Road are one of the following...

Typical causes of these accidents are...

Head On  9%

- Narrow lanes
- Curving alignment
- Inadequate pavement markings

Side Swipe  17%

- Narrow lanes
- Curving alignment
- Inadequate pavement markings

Rear End  21%

- Slippery pavement
- Steep grade
- Poor visibility
- Speeding

Single Motor Vehicle  30%

- Slippery pavement
- Inadequate signs and markings
- Poor road design
- Speeding

TRANSPORTATION UNDER VISION 2020

One of the goals of Vision 2020 is to provide a sustainable transportation system which:

- is environmentally friendly, affordable, efficient, convenient, and accessible;
- meets community needs;
- provides for people with disabilities;
- provides for the safe movement of the public;
- considers safety in public spaces [security], through planning and design;
- provides access to all areas of the Region; and
- integrates public transit, bicycles, pedestrians, trucks and automobiles.

The focus of transportation in the Region is based on the following priorities in order:

1. walking
2. needs of people with disabilities
3. bicycling
4. public transit
5. goods movement
6. the private motor vehicle

The Regional Transportation Review (RTR) will clearly outline the transportation services and policies required to achieve the goals of Vision 2020.

Some of the specific components of the RTR that affect this project are:

- develop transit priority measures such as bus only lanes and exclusive mountain accesses for transit;
- accept a decrease in the level of service (increased congestion) on roads;
- use measures in consultation with the community, to reduce traffic intrusion on local neighbourhood streets; and
- divert automobile traffic from the Central Area to the Claremont Access for north-south flow and York Boulevard for east-west flow.

PROBLEM: Slope Stabilization

EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Structural Improvements (retaining walls, reinforced earth)	Stabilize with Vegetation (deep rooted etc.)
Niagara Escarpment Plan - Will the proposed solution meet the objectives and policies of this plan?	maybe (depends on extent of hazard)	maybe (depends on design)	yes
Transportation Review & Vision 2020 - Will the proposed solution meet the objectives of these Regional Documents?	n/a	n/a	n/a
Maintain Aesthetics - Will the proposed solution maintain and/or compliment the existing character of the road?	yes	maybe (depends on design)	yes
Long-term Effectiveness - Will the proposed solution stabilize the slope effectively over time?	no	yes	yes

Region's Preferred Solution:

Vegetation stabilization techniques with structural improvements where vegetation techniques are not suitable/effective

PROBLEM: Drainage

EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Storm Sewers	Improve Surface Drainage (roadside ditches and infiltration)
Niagara Escarpment Plan - Will the proposed solution meet the objectives and policies of this plan?	maybe (concern for erosion)	maybe (concern for down slope effects on vegetation)	maybe
Vision 2020 - Will the proposed solution meet the objective of ensuring good water quality?	no change	maybe	yes
Maintain Aesthetics - Will the proposed solution maintain and/or compliment the exiting character of the road?	no, improper drainage could lead to slope/wall failures	yes	yes
Flooding of Property - Will the proposed solution address the issues of property damage related to poor drainage?	no	yes	maybe
Water on Road - Will the proposed solution address the occurrence of this concern?	no	yes	maybe
Effect on Road Stability - Will the proposed solution assist in stabilizing the pavement surface and/or the slope?	no	yes	maybe

Region's Preferred Solution: Storm sewers, but the Region will also investigate use of surface drainage as well

PROBLEM: Pedestrian Access & Safety

EVALUATION CRITERIA	POTENTIAL SOLUTIONS			
	Do Nothing	Prohibit Pedestrians on James Mountain Road	Improve Safety of Stairs & Upper Sidewalk (lighting, bicycle trough, access)	Make Provisions for Pedestrians along the Road (sidewalks on one side of the road)
Niagara Escarpment Plan Will the proposed solution meet the objectives and policies of this plan?	yes	yes, partly	yes (qualified)	yes (qualified)
Transportation Review & Vision 2020 Will the proposed solution meet the objectives of these Regional Documents?	no	no	partly; will not provide access for those unable to use stairs	yes
Maintain Aesthetics Will the proposed solution maintain and/or compliment the existing character of the road?	yes	yes	yes	maybe, depends on design
Personal Safety (isolation etc.) Will the proposed solution improve personal safety issues?	no change	no, reduces safety for people using road now	improves at top	no
Pedestrian/Traffic Safety Will the proposed solution improve pedestrian/traffic safety (i.e., reduce the potential for vehicle/pedestrian collisions?	no	yes	no, not for those who continue to use the road	yes, depends on design (increased exposure walking along the road, but less crossing movements)

Region's Preferred Solution:

Make provisions for pedestrians along the road with improvements to the stairs through other City/Regional initiatives

PROBLEM: Traffic Operations from Inglewood to St. Joseph's Drive
(study extension)

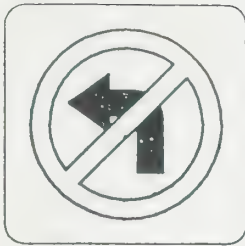
EVALUATION CRITERIA	POTENTIAL SOLUTIONS		
	Do Nothing	Non-Structural Improvements (signage, line painting, regulatory changes)	Structural Improvements (island modification, curb reconstruction)
Niagara Escarpment Plan - Will the proposed solution meet the objectives and policies of this plan?	yes	yes	yes
Transportation Review & Vision 2020 - Will the proposed solution meet the objectives of these Regional Documents?	yes	yes	yes
Speeding - Will the proposed solution reduce the occurrence of speeding on the road?	no	maybe	maybe
Upbound Merge on James Street - Will the proposed solution improve the efficiency of merging?	no	yes	yes
Congestion - Will the proposed solution reduce congestion?	no	yes	yes
Weaving - Will the proposed solution minimize/eliminate weaving?	no	no	no
Safety - Will the proposed solution reduce the potential for collisions?	no	yes	yes

Region's Preferred Solution: Non-structural improvements with some minor structural improvements

PROBLEM: Traffic Operations & Road Design

EVALUATION CRITERIA	POTENTIAL SOLUTIONS			
	Do Nothing (except for regular maintenance)	Non-Structural Solutions (signage, reconstruct pavement)	Reconstruction with no additional lanes (2 lanes, 2 lanes with pull-out bays, 2 wide lanes for breakdowns)	New Alignment (tunnel, new route)
Niagara Escarpment Plan - Will the proposed solution meet the objectives and policies of this plan?	yes	yes	maybe	no
Transportation Review & Vision 2020 - Will the proposed solution meet the objectives of these Regional Documents?	no	yes	yes	no
Maintain Aesthetics - Will the proposed solution maintain and/or compliment the existing character of the road?	yes	yes	maybe	yes (depending on design)
Exceeding the Posted Speed Limit - Will the proposed solution reduce speeding?	no	maybe (through enforcement)	maybe (depends on design)	maybe (depends on design)
Traffic Safety Will the proposed solution improve traffic safety issues, such as: - number of accidents and confusion - access to driveways - provide for disabled vehicles	no, would likely worsen no no	yes no no	yes no maybe	yes yes maybe

Region's Preferred Solution: Reconstruction of the existing right of way, with non-structural improvements at the bottom



JAMES AT MARKLAND

PROBLEM: Quality of life in the neighbourhood or level of service for traffic?

EXISTING CONDITIONS

- No left turn from 7:00 a.m. to 9:00 a.m.
- No demand for a left turn during one-way operation of James Mountain Road (4:20 p.m. to 6:10 p.m.)

OPTIONS AND THEIR IMPACTS

	Better Quality of Life	Better Level of Service
1. NO PROHIBITION (Remove the 7:00 a.m. - 9:00 a.m. ban)	X	✓
2. PART-TIME PROHIBITION (Same as now or change the hours and/or days of the ban)	✓	✓
3. FULL-TIME PROHIBITION (Ban all left turns)	✓	X

REGIONAL POSITION

- The Regional Transportation Review advocates minimizing traffic intrusion into neighbourhoods.
- Markland is a local, residential street.
- Therefore, the Region supports a left turn prohibition.

WHAT DO YOU THINK?

JAMES MOUNTAIN ROAD
Class Environmental Assessment - Phase 2

YOUR OPINION

Workshop No. 2 - April 12, 1995
Central Public School, 119 Hunter Street West, Hamilton, Ontario

The purpose of this workshop is to bring the public up-to-date on the project, to present the planning solutions (i.e., ways of solving the problems) that have been evaluated, and to request your input.

Although there is a separate Comment Sheet attached to your information package, we ask that you also fill out this Position Form to provide us with your opinion on the preferred solutions for each of the problems identified.

Remember, if you 'agree' with a particular solution it is not a commitment on your part or the Region's to carry that solution through. The Region is suggesting that the preferred solutions be investigated in more detail. If, during the evaluation of design alternatives, it becomes apparent that the impacts of a solution are unacceptable then we will reexamine the preferred solution.

Slope Stability

Slopes should be stabilized using vegetative and natural techniques. Structural techniques (i.e., walls or reinforced earth) should only be used where the natural techniques are ineffective.

☐ Agree

☐ Disagree

☐ No Opinion

Drainage

Drainage along and across the road should be improved using storm sewers. Improved surface drainage should be considered, but does not appear to be feasible for most of the roadway.

☐ Agree

☐ Disagree

☐ No Opinion

Pedestrian Access & Safety

Pedestrians walking along James Mountain Road should be provided with a suitable area to walk. Improvements to the stairs should also be made, although through other City/Regional initiatives.

☐ Agree ☐ Disagree ☐ No Opinion

Traffic Operations & Road Design

James Mountain Road should be reconstructed as a 2 lane roadway along basically the same alignment. Non-structural improvements such as improved traffic signing should also be considered.

☐ Agree ☐ Disagree ☐ No Opinion

Study Extension

The section of James Mountain Road from Inglewood to St. Joseph's Drive should be improved through non-structural techniques such as traffic signs, line painting and regulatory changes with some minor structural modifications.

☐ Agree ☐ Disagree ☐ No Opinion

Please leave your completed Position Form in the drop box provided, or mail (before April 28, 1995) to:

Pamela Hubbard, Environmental Planner
Regional Municipality of Hamilton Wentworth
Roads Department
25 Main Street West, 10th Floor
Hamilton, Ontario
L8H 1P1
Telephone: (905)546-4277

Name & Address (Optional):

COMMENT SHEET

Please provide your comments on this project: (If you require additional space, please use the back of this sheet.)

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Please leave your completed Comment Sheet in the drop box provided, or mail (before April 28, 1995) to:

Pamela Hubbard, Environmental Planner
Regional Municipality of Hamilton-Wentworth
Roads Department
25 Main Street West, 10th Floor
Hamilton, Ontario
L8H 1P1
Telephone: (905) 546-4277

Name and Address (Optional):

APPENDIX D

Public Consultation for Phase 3: Design Alternatives

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

**NOTICE OF PUBLIC INFORMATION CENTRE
NOTICE OF PUBLIC WORKSHOP**

**CLASS ENVIRONMENTAL ASSESSMENT
JAMES MOUNTAIN ROAD PROJECT
(FROM GATEVIEW DRIVE TO ST. JOSEPH'S DRIVE)**

The Roads Department is carrying out a study of James Mountain Road as per the "Class Environmental Assessment for Municipal Road Projects" document. The purpose of the study is to identify improvements that should be made to the road and to develop a plan for the road that minimizes impacts to the environment. There have been two previous workshops for this project where participants helped identify the problems and deficiencies with the roadway and the planning solutions. Since then the Region has identified a preferred solution for each of the problems, conducted several studies using a multidisciplinary team, and has developed design alternatives for each solution.

In order to disseminate the information that has been gathered since the last workshop please plan to attend a Public Information Centre on:

Date: Monday, August 14, 1995
Time: 2:00 p.m. - 8:00 p.m.
Place: MacNab Street Presbyterian Church
116 MacNab Street South
(entrance off Hurst Place)

Purpose: to provide the public with an opportunity to review the information collected and the evaluation of alternative designs.

The next opportunity for public input is a Public Workshop to be held on:

Date: Wednesday, August 16, 1995
Time: 7:00 p.m. - 9:00 p.m.
Place: MacNab Street Presbyterian Church
116 MacNab Street South
(entrance off Hurst Place)

Purpose: to provide the public with an opportunity to assist in the evaluation and selection of design alternatives.

Please be advised that the Public Information Centre (August 14th) is intended to disseminate information. Although comments will be accepted at that time, it is preferred that they be brought forward at the August 16th Workshop.

Following this workshop, the Roads Department will recommend the design alternatives that should be carried forward into detailed design and document the process in an Environmental Study Report (ESR). Notice respecting the completion of the ESR will be given through the local newspapers and by direct mailing to individuals and groups who are on, or request to be on, the mailing list.

If you can not attend the workshop but wish to obtain information or submit written or verbal comments about the study at any time, please contact:

Gerry Forbes, Project Manager
or
Pam Hubbard, Environmental Planner
Special Projects Office
25 Main Street West
Hamilton, Ontario, L8P 1H1
Phone: (905) 546-4277
Fax: (905) 546-2385

Alternatively, an information package concerning the James Mountain Road Project will be available from August 9th at the following locations:

Roads Department
Special Projects Office
25 Main Street West, 10th Floor
Hamilton, Ontario
Mon. and Fri. 9 a.m. - 5 p.m.
Closed August 7th

Boy Scouts of Canada
The Scout House
375 James Street South
Hamilton, Ontario
Mon. to Fri. 9 a.m. - 4 p.m.
Closed August 7th

The Hamilton Public Library
Central Branch
55 York Boulevard
Hamilton, Ontario
Mon. to Fri. 9 a.m. - 6 p.m.
Tues. to Thurs. 9 a.m. - 9 p.m.
Sat. 9 a.m. - 5 p.m.
Closed August 7th
(Access from Jackson Square Mall or York Boulevard)

As a result of public input, the southern study boundary has been extended from Inglewood Drive to St. Joseph's Drive. This means that the study includes, among other issues, a review of the 'No Left Turn' regulation from James Street onto Markland Street.

60.15

Figure 1: Catchment Area



Circularization Area

Total No. Circulated = 2029

a James Mountain Road

PROJECT UPDATE

Summer 1995

Issue No. 2

The Roads Department is currently in Phase 3 (evaluation and selection of design options) of the Environmental Assessment Study for James Mountain Road. The purpose of the study is to identify improvements that should be made to the road and to develop a plan for the road that incorporates these improvements.

The purpose of this newsletter is to provide you with an update on the results of the second (April 12th) workshop and to offer you the opportunity to become involved in the project again.

At the first workshop the problems of poor drainage, slope instability, a lack of pedestrian access and safety, unacceptable roadway design and traffic operations from Gateview Drive to St. Joseph's Drive were identified and used to develop planning solutions.

At the second workshop participants were presented with planning solutions for each of the problems and were asked to comment on them. This newsletter presents a summary of the issues raised during Phases 1 and 2 in a question and answer format.

**Roads Department
Special Project Office**
25 Main Street West, 10th Floor
Hamilton, Ontario L8P 1H1
Phone: (905) 546-4277
Fax: (905) 546-2385

P E D E S T R I A N A C C E S S

What is the Niagara Escarpment Commission's (NEC) position on construction of a new walkway along James Mountain Road?

The NEC permits land to be used for essential transportation facilities. Essential means 'that which is deemed necessary to the public interest after all alternatives have been considered.'

There are so few people walking there now – how can you justify spending thousands of taxpayers dollars on so few people?

There are only a few people walking along James Mountain Road everyday. It is likely that the demand to walk up this access is greater than the actual number of pedestrians using the roadway now. It is expected that a new walkway along James Mountain Road will attract additional pedestrians who previously could/would not use the stairs.

The road is so steep, wheelchair bound people, some seniors and people with health problems will not be able to walk up the hill.

One of the objectives of Vision 2020 is to promote walking as a mode of transportation. While we realize that the infirm and some of the elderly will not be able to make use of a walkway on James Mountain Road, there is a significant population that can make use of this facility.

The public has indicated that vehicles break down on this section and the Hamilton Wentworth Regional Police are regularly called concerning disabled vehicles on James Mountain Road. An emergency telephone is available for drivers who break down – but there is not a safe area to walk to the phone!

The stairs are already providing this service for pedestrians and could be retrofitted for strollers and wheelchairs.

The stairs are not providing service for people who rely on motorized scooters as their principle means of transport, for a number of people who physically cannot climb the stairs, and for those who do not feel secure using the stairs because they are 'isolated'.

Solution Carried into Design

The issue of pedestrian access and safety has divided public opinion. The Region recommends a walkway to enhance the safety of people who are trying to access the emergency phone, to promote walking as an alternate mode of transportation, and to address the issue of personal safety/security.



Printed on Recycled Paper

STABILITY

The road must be stabilized before any other work is carried out!

We agree. A proper foundation is essential for the long term stability of this road.

What is meant by 'vegetative techniques'? Will this be effective in heavy rain?

In some instances it is possible to stabilize a slope by using vegetation, typically trees and shrubs that extend roots deep into the soil. The roots serve to hold the soil in place, reduce erosion and prevent any localized slope failures. The deep roots make this system effective even during periods of heavy rain. There are areas where this technique will not be effective (e.g., at rock outcrops). Long term slope stability is the goal here. The Region will assess the suitability of this technique and use it when it is considered to be the most effective technique. In instances where either a retaining wall or vegetation could be used, public opinion and Niagara Escarpment Commission policies will determine the technique used.

Retaining walls are unsightly and will scar the face of the Escarpment.

The Region will minimize the height and size of retaining walls and use retaining walls that compliment the environment. The NEC, in some instances, promotes the use of retaining walls because they can cause less damage to the existing environment than regrading the existing slopes. We will also give consideration to vegetation screens to minimize visual intrusion of necessary walls.

Solution Carried into Design.

A combination of vegetative techniques and retaining walls will be used to provide long term slope stability and meet public and NEC objectives.

DRAINAGE PROBLEMS

Are the storm sewers downstream of James Mountain Road adequately sized to handle the increased volume of water?

Yes. The storm sewers in this area are sized to handle light to moderate storm water runoff. However, storm sewers are not intended to handle runoff from heavy rainfalls. In these instances, the runoff that can not be accommodated by the sewers is intended to be temporarily stored in the roadside ditches or gutters. The problem with James Mountain Road is that the catchbasins on James Mountain Road are not placed properly to collect the runoff and excess water is running across and over the road.

A significant amount of storm water runs uncontrolled down the Escarpment at the stairs.

This study will address the problems with the drainage of James Mountain Road. The runoff from the Escarpment that does not cross James Mountain Road is outside of the project. However, we will bring this concern to the attention of the Environmental Services Department.

Solution Carried into Design

In order to minimize the width of the roadway and to improve the road drainage the Region is recommending the installation of storm sewers with relocation and addition of catchbasins.





We are currently assessing the historical development and significance of the existing retaining walls.

Long term slope stability must be accomplished

Driveway access/egress is an on-going concern



ROADSIDEWAY

At the second workshop the discussion on other subjects ran over time and did not allow us to talk about this topic. Therefore, we will start the next meeting with a discussion on this issue. Despite the lack of a formal discussion on the planning solutions for this problem, you commented as follows:

The roadway must be kept narrow to reduce speeding and maintain the country look and feel of the road.

Almost everyone we have talked to is in agreement with this statement. However, the roadway is too narrow in some places and this is likely causing some of the accidents. Our objective will be to keep the road as narrow as safety will permit.

The road is unsafe in it's current state.

The accident record certainly bears this out. The accident rate on James Mountain Road is higher than the average accident rate for arterial roads in the City of Hamilton. The majority of the collisions are single motor vehicle accidents, head on collisions, side swipes and rear enders.

There must be an area provided for disabled vehicles.

Many of you have suggested, and the Regional Police confirm, that vehicles regularly stall or break down while climbing the hill. However, the provision of an area for disabled vehicles (wide lanes or pull off bays) competes with the objective to keep the road narrow - we will have to find a balance between traffic safety and roadway character.

Solution Carried into Design

The recommended planning solution is reconstructing the existing 2 lane roadway along basically the same route. The exact width of the roadway and minor changes in alignment (if any) will be discussed at the next workshop with the public.

STREET EXTENSION

'No Left turn' from James St. to Markland St.

Why is it acceptable for through traffic to use Charlton Ave. but not Markland St.? They are both residential streets. All of the streets in the neighbourhood should share the burden of through traffic!

Under the street hierarchy as set out by the Regional and City Official Plans, Markland St. is designated as a 'local' street whose function is to provide access to the neighbourhood; Charlton is designated as a 'minor arterial' or a Regional Road whose function is to provide access to the neighbourhood and to move all traffic. Despite the fact that the adjacent land uses are the same, the function of the roads are not.

Drivers who see the 'no left turn' at Markland often turn anyway or perform a "U" turn which is unsafe.

There is a significant number of illegal left turns during the morning rush hours. This is a definite indication that there is a demand for the left turn. However, by allowing the left turn and increasing the level of service to the drivers, we are also reducing the quality of life for those people who live along Markland Street. We have to decide if one objective is more important than the other and to what extent.

There are already back-ups at St. Joseph's Drive.

Back-ups at St. Joseph's Drive will get worse even under the status quo because traffic volumes can be expected to increase. This problem can be solved by either providing an alternate route (such as Markland) or by improving the turn from James Mountain Road onto St. Joseph's Drive.

Solution Carried into Design

At the end of the debate on this issue we asked for a vote on your preferred solution. The results are 9 favour no prohibition, 17 favour a part-time prohibition and 6 favour a full-time prohibition. We understand that several people who were active in the discussion left before the vote. The attendance at the workshop was equally split between residents of the Mountain and residents of the Lower City.

Under Vision 2020 and the Regional Transportation Review, the Region supports prohibiting left turns from James Street onto Markland Street. Whether that prohibition should be part-time or full-time has not been decided yet. This decision will be made when the preferred design for operational improvements at James Street/St. Joseph's Drive is finalized.

James Street at St. Joseph's Drive

The 'no left turn' at Markland worsens the congestion here.

That's true, there is additional traffic using this intersection because they can not short cut on Markland Street. As discussed above, the issue with the 'no left turn' is level of service to traffic versus quality of life in the neighbourhood.

The driveway to the parking garage and the bus stop on St. Joseph's Drive are too close to James Street

There is no doubt that vehicles and buses on James Street are inhibiting the turn from James Mountain Road onto St. Joseph's Drive. We are currently investigating options with the HSR and are reviewing the operation of the parking garage in preparation for discussions with St. Joseph's Hospital about possible changes.

Making James Mountain Road a one-way street in the upbound direction would solve all of these problems.

This would solve the problems of left turns onto Markland and right turns onto St. Joseph's Drive, but it is not without other problems. The most obvious of which is access to properties on James Mountain Road itself. It would be unreasonable to force residents on James Mountain Road to ascend the escarpment if they wanted to get to any location in the lower city.

Solution Carried into Design

The Region recommends some non-structural changes such as improved signing and line painting, and some minor structural changes to improve traffic flow.

WORK IN PROGRESS

In order to complete the next phase of the project, we are preparing a detailed inventory of the natural, social, cultural and economic environments. To assist us in identifying important elements of the environment and to assess the impacts of our designs on these elements, we are liaising with the NEC, a heritage consultant, a noise impact analysis firm, a computer imaging consultant, a vegetation specialist and local interest groups.

WHAT NEXT?

The goals of this project are to ensure that the basic transportation needs of the Region are provided and the needs of the community are satisfied. Sometimes these goals conflict and tough decisions have to be made. Not everyone will be happy with our decisions, but we will be upfront and accountable for them.

The above planning solutions will be carried forward into the design stage. However, there is still a lot of work to be done. The next step in the Environmental Assessment process is the identification and evaluation of design alternatives. In other words, since we have decided what we are going to build, we now have to decide how we are going to build it! For example, in areas where pavement widening is necessary are we going to widen on the uphill side? the downhill side? or a little of both? The Region is currently preparing some design alternatives that will be evaluated against the criteria that the public and the Region have determined as important. That means we will assess each alternative's impact on features such as the natural and social environment, access to driveways, cost, safety, NEC objectives, etc.

In order to provide you with the opportunity to work with us to select a design alternative that meets the community needs as well as the Regional roads needs we are holding a third workshop. Please plan to attend this workshop on:

Date: Wednesday, August 16, 1995
Time: 7:00 pm. to 9:00 pm.
Location: MacNab Street
Presbyterian Church
116 MacNab Street South
(entrance off Hurst Place)

If you have any questions or comments on this project call:

Gerry Forbes, Project Manager
or
Pam Hubbard, Environmental Planner
at 546-4277
Roads Department
Special Projects Office
25 Main Street West, 10th Floor
Hamilton, Ontario
L8P 1H1
Fax No. 546-2385

a James Mountain Road

PROJECT

NOTICE

At the public workshop on August 16th we will be seeking your opinions on our design alternatives. In order for you to understand our thought process, and to make an informed decision of your own, it is necessary for you to receive all of the information that we have gathered. The two hours that we have for the public workshop is not enough time for us to present you with the information and ask your opinions. In order to distribute the information, allow you time to read and understand the background material and form an opinion on our design options, we are holding a **Public Information Centre (PIC)** on:

Date: Monday, August 14, 1995

Time: 2:00 p.m. - 8:00 p.m.

**Location: MacNab Street
Presbyterian Church
116 MacNab St. S.
(entrance off Hurst
Place with parking
on the street or in
the lot behind the
railway tracks)**

The purpose of the PIC is to give information to you and answer your questions about the design alternatives. The workshop on August 16th will be an opportunity for an open/public discussion on this information.

The James Mountain Road Project is currently in Phase 3 of the Environmental Assessment Process (i.e., the evaluation and selection of design options). In order to complete this phase of the process, the Roads Department has been working hard to inventory the features of the roadway and the surrounding environment. The impact that the design alternatives will have on these features will be assessed and presented to you, along with a preferred alternative, at the August 16th public workshop.

Information that we have collected to date includes; an inventory of trees, shrubs and wildlife adjacent to the roadway, computer images of the proposed design alternatives, a heritage assessment of the roadway, the retaining walls and the adjacent buildings and a visual assessment of the roadway to identify key points and features that lend to the aesthetics of the roadway.

For those of you who can not attend this PIC, information packages will be available from August 9th at the following three locations:

Roads Department
Special Projects Office
25 Main Street West, 10th Floor
Hamilton, Ontario
Mon. to Fri. 9 am. - 5 pm.
Closed Mon. Aug. 7, 1995

Boy Scouts of Canada
The Scout House
375 James Street South
(foot of West 5th Access)
Hamilton, Ontario
Mon. to Fri. 9 am. - 4 pm.
Closed Mon. Aug. 7, 1995

The Hamilton Public Library
Central Branch
55 York Boulevard
Hamilton, Ontario
Mon. to Fri. 9 am. - 6 pm.
Tues. to Thurs. 9 am. - 9 pm.
Sat. 9 am. - 5 pm.
Closed Mon. Aug. 7, 1995
(access from Jackson Square Mall or
York Boulevard)

If you have any questions or comments on this project call:

Gerry Forbes, Project Manager
or
Pam Hubbard, Environmental Planner
at 546-4277
Roads Department
Special Projects Office
Fax No. 546-2385



Roads Department
Special Project Office
25 Main Street West, 10th Floor
Hamilton, Ontario L8P 1H1
Phone: (905) 546-4277
Fax: (905) 546-2385

Printed on Recycled Paper



THE REGION OF HAMILTON-WENTWORTH

SPECIAL PROJECTS OFFICE

MEMORANDUM

TO:	See Distribution List	YOUR FILE:	
FROM:	G. J. Forbes, Project Manager Predesign & Special Projects Roads Department	OUR FILE:	60.10.01.2
		PHONE:	2433
SUBJECT:	James Mountain Road Class Environmental Assessment (EA)	DATE:	19 July 1995

Attached please find a Project Update and a Project Notice for the James Mountain Road EA. These newsletters include notification of an August 14th public information centre and an August 16th public workshop.

An information centre is being held in advance of the workshop to disseminate the large quantity of information that we have gathered for this project. This will allow the public to assimilate all the necessary data required to make informed decisions and provide meaningful feedback at the workshop. Although we will consider public input at the August 14th information centre, it is intended that information will flow in one direction: from the Region to the public.

The purpose of the workshop (August 16th) is to present an evaluation of the design alternatives and to receive public input on our preferred design. Following the workshop, the Special Projects Office intends to confirm whether the preferred design alternative will be carried forward into detailed design. A Study Team meeting will only be called if there are significant changes to the alternative preferred by the Study Team. Otherwise, this office will proceed to Phase 4 of the EA which is the preparation of the Environmental Study Report (ESR). The ESR will be circulated to all of the Study Team members and those departments and agencies that specifically requested a copy of this document.

Please feel free to attend the information centre or the workshop if you wish to hear the issues raised by the public or to participate as an agency/department representative.

Should you have any questions concerning this project, please contact myself or Pam Hubbard.

gf
Attach.

THE REGION OF HAMILTON-WENTWORTH

MEMORANDUM

TO: T. Anderson, Chairperson
R. Wade, Vice-Chairperson
Transportation Services Committee

YOUR FILE:

FROM: G.J. Forbes, Project Manager
Predesign & Special Projects
Roads Department

OUR FILE: 60.10.01.2
PHONE: 2433

SUBJECT: James Mountain Road
Class Environmental Assessment (EA)

DATE: 1995 July 17

Attached please find a Project Notice and a Project Update for the James Mountain Road EA. They include notification of an August 14th public information centre and an August 16th public workshop. These newsletters are being sent to approximately 600 residents and property owners in the vicinity of this section of the road as well as a number of interest groups, agencies, and City and Regional Departments. The information centre and the workshop will be advertised in the Hamilton Spectator and the Hamilton Mountain News at least one week prior to the events.

Please note that the southern study boundary has been extended from Inglewood Drive to St. Joseph's Drive. This means that this study will now address the issue of left turns from James Street onto Markland Avenue. In fact, there will be a set amount of time set aside at the August 16th workshop to discuss this issue.

Should you have any questions on this project please contact me at extension 2433 or Pam Hubbard, Environmental Planner at extension 2388.

/gf
Attach.

Distribution List

Councillor M. Caplan
Councillor W. McCulloch
Councillor F. Eisenberger
Councillor F. D'Amico

Councillor M. Kiss
Councillor G. Agro
Councillor H. Merling
Councillor D. Ross

JAMES MOUNTAIN ROAD CLASS ENVIRONMENTAL ASSESSMENT

PUBLIC INFORMATION PACKAGE

August, 1995

WELCOME

The Project Team would like to take this opportunity to thank you for the time you have invested in the James Mountain Road study. Your comments continue to play an important role in the overall direction this study is taking.

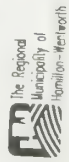
PLEASE SIGN-IN

Before proceeding, please take a moment to sign the attendance register.

STUDY AREA MAP



JAMES MOUNTAIN ROAD CLASS ENVIRONMENTAL ASSESSMENT



The Regional
Municipality of
Hamilton-Wentworth



Environmental
Engineering
Inc.



PROJECT TEAM

The following individuals make up the James Mountain Road Project Team:

*Gerry Forbes P.Eng.
Region of Hamilton-Wentworth*

Project Manager

*Pam Hubbard / Chris Murray
Region of Hamilton-Wentworth*

Environmental Planners

*Bob McLaughlin P.Eng.
Philips Consultants*

*Consultant Project
Manager*

*David Sinke P.Eng.
Philips Consultants*

*Consultant Project
Engineer*

*Jim Dougan
Dougan and Associates*

Biologist

*Stephan Crispin
Dougan and Associates*

Landscape Architect

*David Cuming M.C.I.P.
Unterman McPhail Cuming Associates*

*Heritage Assessment
Consultant*

*Hazem Gidamy P.Eng.
S.S. Wilson and Associates*

*Noise Assessment
Consultant*

The Project Team has worked closely with representatives from Regional/Area Planning, Public Works and Traffic departments, Niagara Escarpment Commission and Hamilton Region Conservation Authority.

PURPOSE OF THE PUBLIC INFORMATION CENTRE

The purpose of this Public Information Centre is to provide you with the opportunity to:

- review the selected 2 lane roadway cross-section and roadway alignment alternatives;*
- review solutions to traffic operation problems in the study extension;*
- prepare for the Wednesday August 16, 1995 Workshop which will be used to obtain community input on the recommended roadway alignment; and*
- ask questions and record comments.*

*Why should we reconstruct
James Mountain Road?*

BACKGROUND

In the fall of 1994, following the collapse of a small retaining wall adjacent to James Mountain Road, and further deterioration of existing slopes, Regional Council authorized staff to identify and resolve problems associated with James Mountain Road.

Since that time staff, together with government and the public, have identified and assessed a number of problems and related solutions. (see ROADWAY PROBLEMS/SOLUTIONS board).

This study follows the environmental planning process for schedule 'C' projects as outlined in the Class Environmental Assessment for Municipal Road Projects Document (June 1993). Public consultation has and will continue to play an important role in this decision making process.

PUBLIC CONSULTATION

Since the fall of 1994, two Public Workshops have been held.

*1st Public Workshop
Wednesday, Feb. 15/95
7:00 p.m. - 10:00 p.m.
Hamilton Public Library*

*2nd Public Workshop
Wednesday, April 12/95
7:00 p.m. - 9:30 p.m.
Central Public School
119 Hunter St. West*

Public input received to date has directed this study in the following ways:

- extended the southern boundary of project study area from Inglewood Dr. to St. Josephs Dr. (see study area map);*
- added pedestrian access, drainage, and traffic operations in the Markland St. area to the list of problems identified at the outset of the study (i.e., slope stability, and roadway design safety); and*
- assisted staff in the evaluation and selection of alternative solutions to the problems previously identified.*

VARIABLES OF ROADWAY DESIGN

Design of any roadway involves making basic decisions on the following two variables, which will be referred to throughout this presentation:

CROSS SECTION: elements which make up the roadway including lanes, curb and gutter, sidewalks, boulevard, guiderail etc., and their respective widths.

ALIGNMENT: path which the proposed road is to follow and side on which to widen.

ROADWAY PROBLEMS AND SOLUTIONS

1. Problem: ROADWAY DESIGN

The accident rate on James Mountain Road is higher than the average for arterial roads in the City of Hamilton. Most of the accidents are head on, rear end or single motor vehicle. Typical causes of these accidents are narrow lanes, curving alignment, slippery pavement and speeding. In some areas, existing lane widths do not meet the minimum engineering standards.

Preferred Solution:

WIDEN EXISTING LANE WIDTHS TO 3.5 METRES AND MINOR CHANGES IN THE ALIGNMENT

The proposed cross section and alignment will be presented at the workshop.

2. Problem: SLOPE STABILITY

There are sections where slope instability has occurred. The Region must ensure that all roadways are stable/safe.

Solution:

A SUITABLY DESIGNED RETAINING WALL

Slope instability on the downhill side requires construction of a retaining wall. In general, a retaining wall will be less disruptive to the local environment than suitably graded slopes.

Continued...

ROADWAY PROBLEMS AND SOLUTIONS

(Continued)

3. Problem: ROADWAY DRAINAGE

Catchbasins on James Mountain Road are not placed properly to collect existing runoff.

Solution:

STORMSEWER SYSTEM

This system will include curbs, gutters and catchbasins.

4. Problem: MOTORIST/PEDESTRIAN ACCESS AND SAFETY

Police tell us that break downs occur almost daily on James Mountain Road. Drivers of vehicles that break down must have a safe place to stop their vehicle, which will not close down traffic and will allow safe access to emergency phones. In addition, Vision 2020 calls for greater pedestrian access throughout the Region.

Solution:

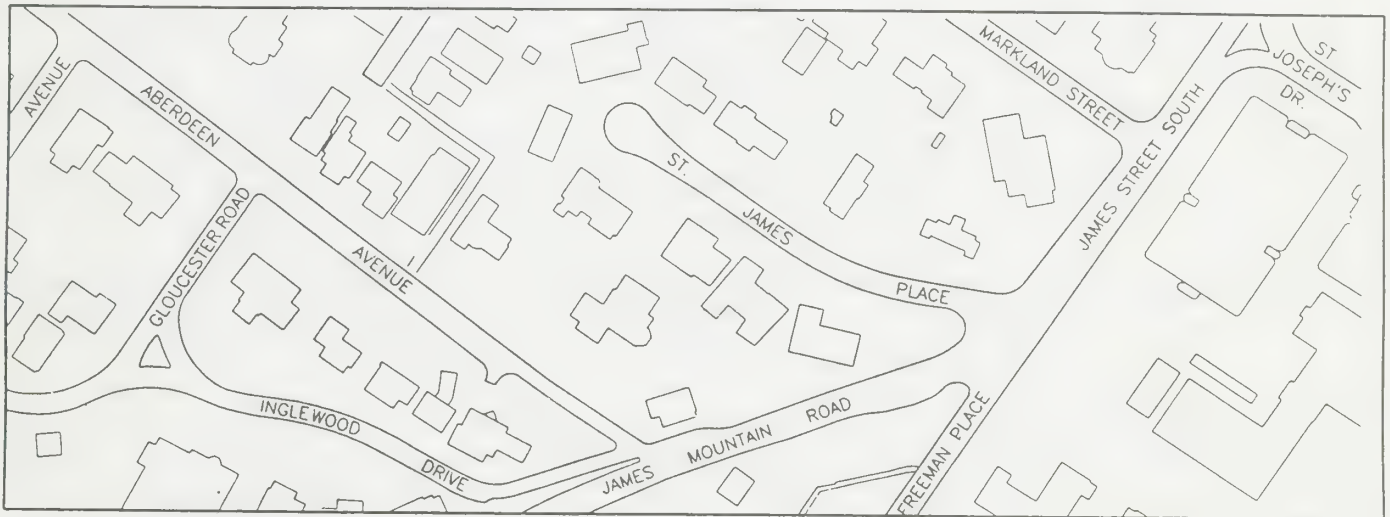
1.5 METRE WIDE REFUGE/WALKWAY

The refuge/walkway would be provided on the downhill side of the roadway in order to connect to the existing stairway at Inglewood Drive. It will also provide space for vehicles that are temporarily broken down.

TRAFFIC OPERATIONS PROBLEM/SOLUTION

Problem:

The proximity of driveways and intersections and the part-time turn prohibition from James St. to Markland St. cause traffic congestion and increased collision potential during peak hours. Improvements to traffic operations in the Study Extension (i.e., Inglewood Dr. to St. Josephs Dr.) must be undertaken as a part of the James Mountain Road Project.



Solution:

In general, the roadway width and alignment are such that structural changes/reconstruction are not required. Non-structural improvements (e.g., relocating the bus stop on St. Josephs Drive) are the preferred solution for the Study Extension area. In regards to the turn prohibition to Markland Street, a full time prohibition is recommended. The Road Departments recommendation along with your comments will be presented to Regional Council.

PUBLIC INPUT

You have indicated to the Project Team that the James Mountain Road study area contains a number of important features. The following represents a general summary of the concerns you have raised since this study began.

*Safety:
Cost:*

Vehicular and pedestrian safety is of primary concern.

Cost effective solutions should be considered.

Heritage Features:

There are a number of heritage features such as buildings, walls and the roadway itself that add character to this area.

*Roadway
Character:*

Motorists and local residents enjoy the natural character of this roadway landscape.

Property Access:

Land owners whose driveways directly access the roadway have very limited space to manoeuvre.

Property Required:

Minimize land required from private property owners.

Noise:

Will the noise in this area will be noticeably higher?

Continued...

PUBLIC INPUT (Continued)

Natural Environment:

The trees and wildlife of the area help define the James Mountain Road environment. Minimum impact is desirable.

Traffic Law Enforcement:

Speeding and illegal left turns on Markland St. should be enforced by the Police.

Neighbourhood

Traffic Infiltration: Conflicting concerns regarding through traffic on Markland St.

Stormwater:

Stormwater drainage should be better managed.

Pedestrian Access:

Conflicting concerns over need for pedestrian access along the road.

Retaining Walls:

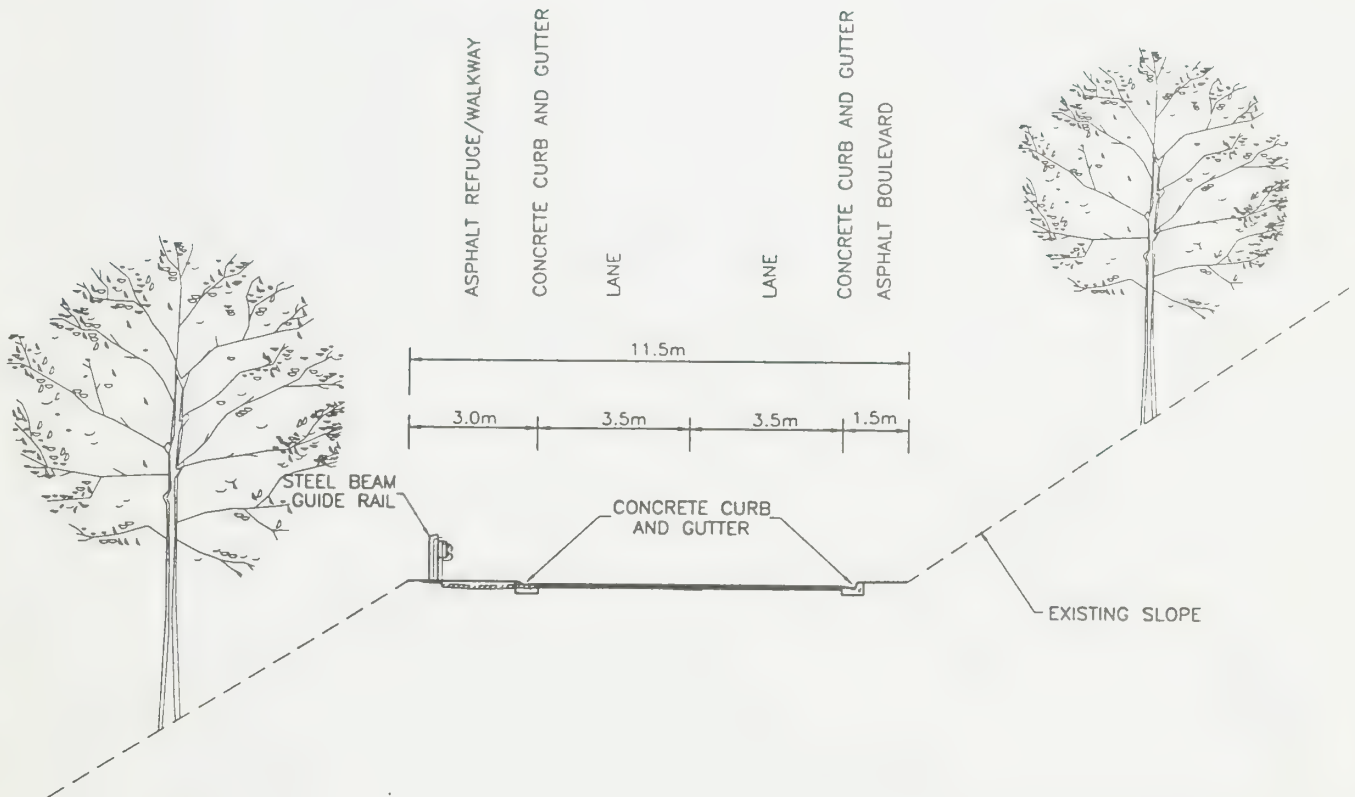
Retaining wall needs to be as low and aesthetically pleasing as possible.

CROSS SECTION

A preferred roadway cross section has been selected which best responds to problems identified and public input.

The proposed cross section, as well as factors which influenced the selection of each element of the cross section, are presented on the following sheets.

THE SELECTED CROSS SECTION



ELEMENTS OF THE SELECTED CROSS SECTION

GUIDE RAIL

The new roadway is designed to maximize safety. A guide rail is still required in areas where steep slopes could cause severe injuries to drivers who do lose control. The guide rail design will be selected based on both safety and aesthetics. The guide rail will take up to 1.0m of space on the roadway platform.

RETAINING WALLS

With the widening required by the cross section, a retaining wall on at least the downhill side will be necessary. The Niagara Escarpment Commission prefers the use of retaining walls to minimize damage to the natural environment. This cross section shows the wall on the downhill side of the road, but the uphill side wall is still an option - it will be discussed at the workshop.

REFUGE/WALKWAY AREA

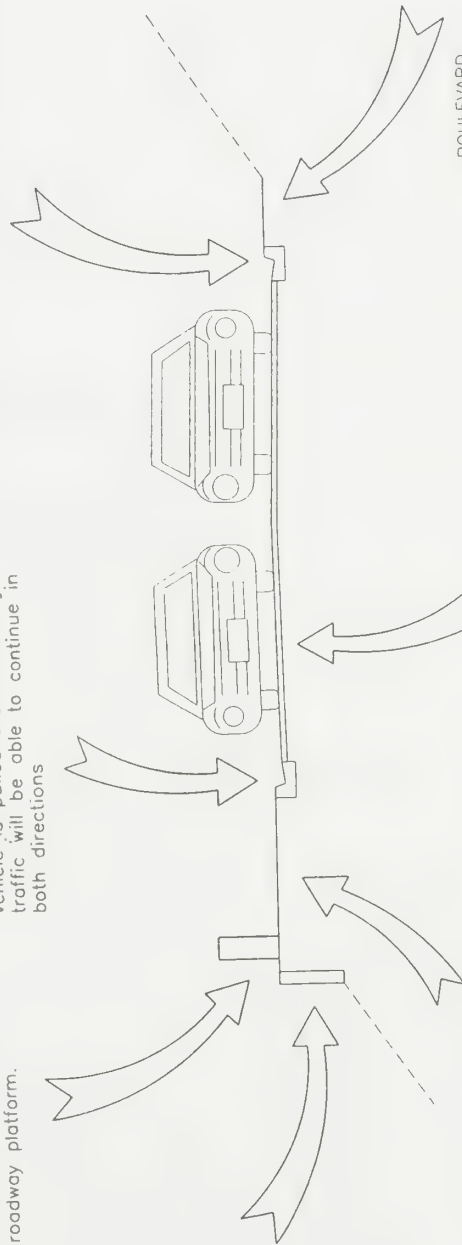
The refuge/walkway has been located on the downhill side of the road for several reasons. At this location, the refuge/walkway is a natural continuation of the stairs at Inglewood Drive. Vehicles are typically travelling slower going uphill and pedestrians would feel safer on this side. Vehicles usually break down going uphill. Locating the refuge/walkway adjacent to the uphill lane will allow the driver to pull over and walk to the emergency phones without crossing the street. The minimum width of a refuge/walkway to provide a satisfactory level of comfort for users is 1.5m.

CURB AND GUTTER

Curb and gutter is required to collect and direct runoff to the proposed catchbasins and storm sewers; curb and gutter is typically 0.5m wide.

This curb will be mountable so that disabled vehicles can use the walkway as an emergency refuge area. If the vehicle is pulled over for enough, traffic will be able to continue in both directions.

This curb is a barrier type curb and will redirect some errant vehicles back into their lane.



LANE WIDTHS

A significant number of the accidents that are occurring on James Mountain Road are "head-on" and "side swipe" collisions that could be attributed to narrow lanes. In order to minimize these accidents, and alleviate liability concerns the Region requires two 3.5m lanes. Also, the lane widths combine with the refuge/walkway to simultaneously provide sufficient room to accommodate traffic in both directions and a disabled vehicle.

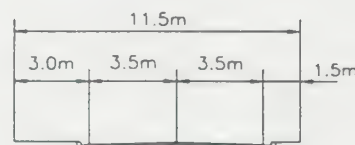
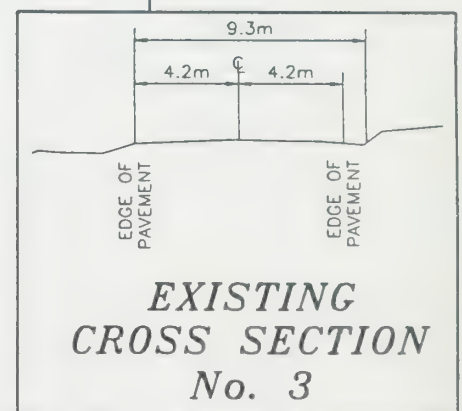
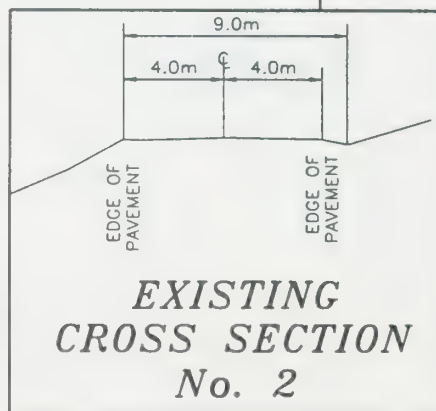
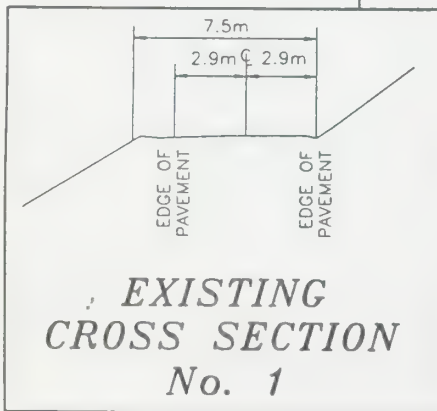
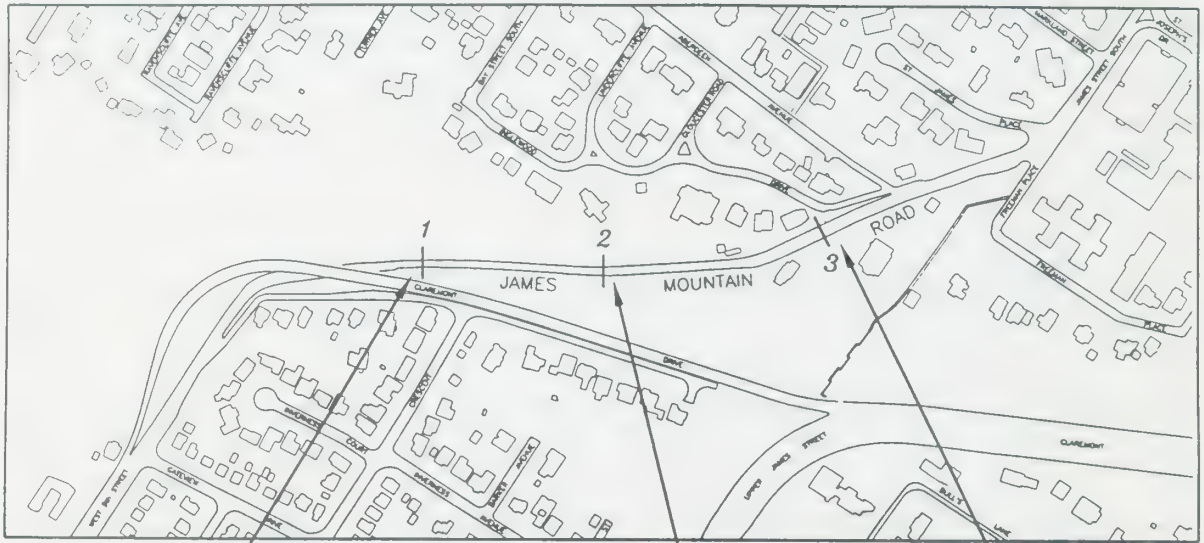
BOULEVARD

A 1.0m wide boulevard is required on the uphill side of the road to provide for snow storage, traffic signs, street lights and the opening of doors on cars that have broken down. The width can be reduced at selected locations in order to protect significant trees.

*How much wider is the
new roadway cross section
compared to the existing
one?*

COMPARISON

The difference between the existing and the proposed roadway cross section varies from location to location.



PROPOSED CROSS SECTION

In summary the proposed roadway will be 2.2m to 4.0m wider than the existing roadway.

ROADWAY ALIGNMENT ALTERNATIVES

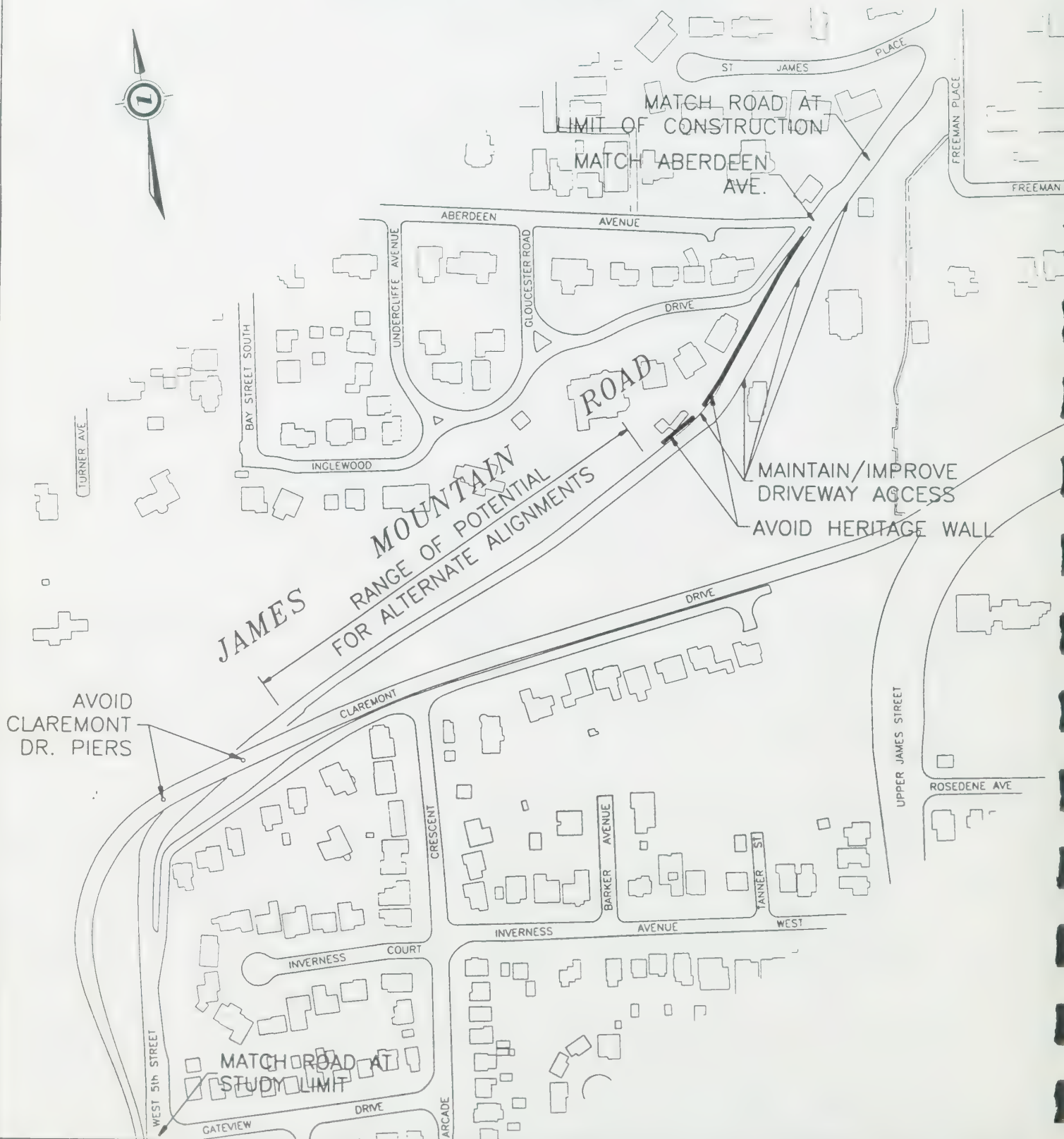
As indicated on the PROBLEMS/SOLUTIONS board, a preferred roadway cross section has been selected based on your input.

The question then becomes on which side will the road be widened – on the up slope (south) or down slope (north) side?

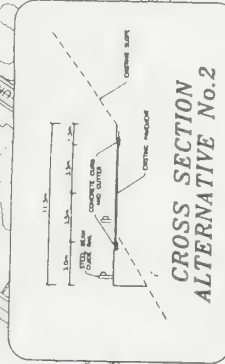
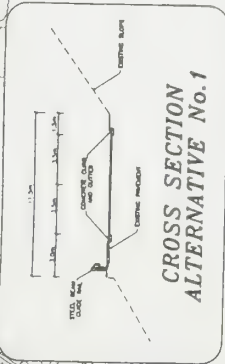
Several inflexible constraints limit our options in selecting an alignment. As you will see on the following map, these constraints include:

- the Claremont Drive piers.*
- the existing stone wall south of Inglewood Drive, which has been identified as having heritage value.*
- maintaining or improving driveway access.*
- matching sideroads as well as James Mountain Road and West 5th Street at the Study Limits.*

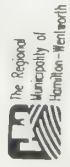
ROADWAY ALIGNMENT DESIGN CONSTRAINTS



ROADWAY ALIGNMENT DESIGN ALTERNATIVES



EXISTING ALIGNMENT
PROPOSED CENTRELINE ALIGNMENT
ALTERNATIVE No.1
PROPOSED CENTRELINE ALIGNMENT
ALTERNATIVE No.2



JAMES MOUNTAIN ROAD CLASS ENVIRONMENTAL ASSESSMENT



Philip Design Engineering Limited

ROADWAY DESIGN EVALUATION

The following roadway evaluation tables reflect the various concerns you have raised regarding the reconstruction of James Mountain Road. This information has helped the Project Team select a recommended roadway design from the two alternatives identified previously.

COMPARATIVE EVALUATION OF
ROADWAY RECONSTRUCTION DESIGN ALTERNATIVES

ECONOMIC ENVIRONMENT					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <u>Cost</u>					
a) Construction	<ul style="list-style-type: none"> dollar amount required to design and construct retaining walls, roadway and mitigation measures (e.g., landscaping, period lighting, etc.) 	Construction costs will differ depending on the alternative roadway realignment design selected.	<ul style="list-style-type: none"> estimated costs based on Regional projects 	<ul style="list-style-type: none"> \$2.0 million 	<ul style="list-style-type: none"> \$1.75 million
b) Maintenance	<ul style="list-style-type: none"> dollar amount required to maintain roadway (in addition to maintenance activities already assumed) 	Additional maintenance costs represent a long term debt to the Region.	<ul style="list-style-type: none"> actual costs based on ongoing maintenance activities 	<ul style="list-style-type: none"> \$5,120.00 	<ul style="list-style-type: none"> \$5,120.00
c) Property	<ul style="list-style-type: none"> dollar amount required to purchase private property 	Property acquisition costs will differ depending on the alternative roadway realignment design selected.	<ul style="list-style-type: none"> assessment mapping property assessor legal surveys 	<ul style="list-style-type: none"> \$250.00 (based on \$6,000.00/acre) 	<ul style="list-style-type: none"> \$1,100.00 (based on \$6,000.00/acre)
2. <u>Business Impact</u>	<ul style="list-style-type: none"> number and type of businesses impacted and the nature of the disruption (i.e., type and duration of impact) 	Business activity can be impacted either through loss of property (long term impact) or construction activity (short term impact). The objective is to minimize both the long term and short term impacts, and to recognize the critical periods (months) for business activity adjacent to the road.	<ul style="list-style-type: none"> assessment mapping field visit discussion with area businesses 	<ul style="list-style-type: none"> one business impacted during construction only access maintained throughout construction inconvenience only duration 5 months 	<ul style="list-style-type: none"> one business impacted during construction only access maintained throughout construction inconvenience only duration 5 months

**COMPARATIVE EVALUATION OF
ROADWAY RECONSTRUCTION DESIGN ALTERNATIVES**

NATURAL ENVIRONMENT					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <u>Vegetation Impact</u>					
a) Canopy (Trees over 10cm diameter)	<ul style="list-style-type: none"> number, species, age, condition, and significance (native, wildlife habitat value) 	Extent and type of impacts to roadside vegetation will differ depending on roadway alignment. Knowledge of the type, location, and significance of the resource will assist in determining the type of mitigation required (replanting, management, etc.)	<ul style="list-style-type: none"> field inventory by ecologists geotechnical information topographic mapping communication with HRCA, NEC, Region 	<ul style="list-style-type: none"> estimated area of impact on canopy/understory/groundcovers - 0.21 ha trees removed - 48; significant trees removed - 10 fair opportunity for mitigation moderate to high overall impact 	<ul style="list-style-type: none"> estimated area of impact on canopy/understory/groundcovers - 0.31 ha trees removed - 86 significant trees removed - 5 good opportunity for mitigation moderate overall impact
b) Understory (shrubs & saplings)	<ul style="list-style-type: none"> area, botanical quality, and significance 				
c) Groundcovers (grasses, wildflowers, etc.)	<ul style="list-style-type: none"> same as above 				
2. <u>Wildlife Impact</u>	<ul style="list-style-type: none"> number and types of wildlife habitat present in study area vicinity observed and potential users (birds, mammals, reptiles, amphibians) and their relative significance 	The vegetated Escarpment provides habitat for wildlife living and/or travelling through the study area. The objective is to minimize loss of critical habitat and to minimize fragmentation of habitats.	<ul style="list-style-type: none"> field inventory topographic mapping communication with HRCA, NEC, Region 	<ul style="list-style-type: none"> no significant species, habitats or conditions are subjected to primary impacts excellent opportunity for mitigation 	<ul style="list-style-type: none"> no significant species, habitats or conditions are subjected to primary impacts excellent opportunity for mitigation
3. <u>ESA (Environmentally Significant Area) Integrity Impact</u>	<ul style="list-style-type: none"> attributes which fulfil criteria for ESA; these reflect the quality, size, and significance of the ESA and its flora/fauna 	The vegetation and wildlife, in conjunction with the Escarpment land form, are part of a larger ecosystem extending along the Escarpment. The impacts on natural conditions and functions of the ESA should be minimized.	<ul style="list-style-type: none"> field inventory geotechnical information topographic mapping communication with HRCA, NEC, Region 	<ul style="list-style-type: none"> green span corridor not significantly or permanently affected no primary impacts or significant species, vistas and landscape contrast impact on land form by introduction of wall fair opportunity for mitigation 	<ul style="list-style-type: none"> green span corridor not significantly or permanently affected no primary impacts or significant species, vistas and landscape contrast good opportunity for mitigation

**COMPARATIVE EVALUATION OF
ROADWAY RECONSTRUCTION DESIGN ALTERNATIVES**

SOCIAL ENVIRONMENT					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <u>Visual Impact</u>	<ul style="list-style-type: none"> degree to which vegetation removal, slope displacement, and roadway reconstruction (i.e., roadway realignment, laneway widths, guard rails, lighting, and signage) will change the visual character of the James Mountain Road landscape 	<p>The James Mountain Road Escarpment corridor has been identified as having a special character and provides a unique visual experience. Changes to the existing roadway curvature, with the displacement of vegetative slopes and the introduction of features into the roadscape, can have adverse effects to the visual resource of James Mountain Road.</p> <p>The intent is to minimize the visual impacts to this roadway corridor.</p>	<ul style="list-style-type: none"> study area field work by a landscape architect photo inventory 	<ul style="list-style-type: none"> moderate to high impact a detailed visual assessment has been completed and will be available for reference at the open house 	<ul style="list-style-type: none"> moderate impact a detailed visual assessment has been completed and will be available for reference at the open house
2. <u>Private Property Impact</u>	<ul style="list-style-type: none"> area of private property required for construction 	<p>The enjoyment of one's property is partially related to the amount of useable space the resident owns</p>	<ul style="list-style-type: none"> assessment mapping study area/field trip topographic mapping 	<ul style="list-style-type: none"> 150 square metres (area to be shown on map at open house) 	<ul style="list-style-type: none"> 750 square metres (area to be shown on map at open house)
3. <u>Noise Impact</u>	<ul style="list-style-type: none"> change in sound level (dBA) the area residents will experience 	<p>Realignment alternatives will move traffic closer or farther away from area residents. This may increase or decrease the noise they hear in the future.</p>	<ul style="list-style-type: none"> topographic mapping noise assessment study 	<ul style="list-style-type: none"> maximum increase in noise levels to year 2021 is 1 dBA 1 dBA increase is not considered to be noticeable by the human ear 	<ul style="list-style-type: none"> maximum increase in noise levels to year 2021 is 1 dBA 1 dBA increase is not considered to be noticeable by the human ear

**COMPARATIVE EVALUATION OF
ROADWAY RECONSTRUCTION DESIGN ALTERNATIVES**

TRANSPORTATION					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <u>Safe Access to/from Driveways</u>	<ul style="list-style-type: none"> degree of driveway visibility from James Mountain Road area for manoeuvring off/on James Mountain Road 	<p>Motorists accessing properties directly adjacent to James Mountain Road should be able to do so in a safe manner.</p>	<ul style="list-style-type: none"> engineering standards study area/field work topographic mapping discussion with property owners 	<ul style="list-style-type: none"> there is negligible impact on visibility since the driveways and the road in the vicinity of the driveways are not being moved there will be no impact on the area for manoeuvring 	<ul style="list-style-type: none"> there is negligible impact on visibility since the driveways and the road in the vicinity of the driveways are not being moved there will be no impact on the area for manoeuvring
2. <u>Roadway Safety</u>	<ul style="list-style-type: none"> collision reduction (which is based on lane widths, number and severity of curves, grades, amount of visibility, and number of roadside obstacles) 	<p>Motorists travelling through the study area should be able to do so in a safe manner, with the least amount of confusion.</p>	<ul style="list-style-type: none"> engineering standards topographic mapping collision records 	<ul style="list-style-type: none"> the majority of the collisions are occurring on the curve at the top of the escarpment. The realignment of the curve and improved signing should reduce these accidents by as much as 80%. The improved cross section and other changes should reduce other collisions by 20 to 40 % 	<ul style="list-style-type: none"> the majority of the collisions are occurring on the curve at the top of the escarpment. The realignment of the curve and improved signing should reduce these accidents by as much as 80%. The improved cross section and other changes should reduce other collisions by 20 to 40 %
3. <u>Speed of Traffic</u>	<ul style="list-style-type: none"> change in speed (which is based on lane widths, volume and type of traffic, severity of curves, grades, parking activity, spacing of driveways, and intersections) 	<p>Public input has identified speeding as a problem in the study area.</p>	<ul style="list-style-type: none"> speed studies plans and profiles traffic counts discussion with area residents 	<ul style="list-style-type: none"> the wider lanes and improved alignment will likely result in a negligible increase in speed 	<ul style="list-style-type: none"> the wider lanes and improved alignment will likely result in a negligible increase in speed

COMPARATIVE EVALUATION OF
ROADWAY RECONSTRUCTION DESIGN ALTERNATIVES

GOVERNMENT POLICY/REGULATION				
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1
1. <u>Niagara Escarpment Plan (NEP)</u>	<ul style="list-style-type: none"> degree of conformity with Escarpment Natural Area and Urban Area land use policies and applicable development criteria (specifically, new development affecting steep slopes and ravines, water resources, wooded areas, and wildlife habitat, heritage, recreation, and transportation/utilities) 	<p>Portions of the James Mountain Road Study Area fall within the limits of the NEP. NEP land use policies potentially impacted by this project include the Escarpment Natural Area and Urban Area.</p>	<ul style="list-style-type: none"> consultation with NEC staff Niagara Escarpment Plan 	<p>ALTERNATIVE NO. 2</p> <ul style="list-style-type: none"> high degree of conformity with NEP land use policies because of the minimal amount of natural/heritage features impacted on the downslope side
2. <u>Hamilton Region Conservation Authority</u>	<ul style="list-style-type: none"> degree of conformity with Ontario Regulation 151/90 (any proposal to place or remove fill material or alter existing grades) 	<p>Portions of James Mountain Road are located within a regulated area associated with the Niagara Escarpment. As such, this area is subject to HRCA Fill, Construction, and Alteration to Waterways Regulations.</p>	<ul style="list-style-type: none"> consultation with HRCA staff Ontario Regulation 151/90 	<ul style="list-style-type: none"> moderate degree of conformity with NEP land use policies because of the impact on natural/heritage features of the road on both the upslope and downslope sides moderate degree of conformity with Regulation 151/90 because of the retaining wall construction required on both sides of road high degree of conformity with Regulation 151/90 because of the minimal amount of retaining wall construction required on one side of road
3. <u>Vision 2020 and Draft Regional Transportation Review</u>	<ul style="list-style-type: none"> degree of conformity with the Region's commitment to sustainable development 	<p>Both Vision 2020 and the draft Regional Transportation Review provide long term community direction based on the principles and values of sustainable development.</p>	<ul style="list-style-type: none"> consultation with Regional and Area Municipal staff Vision 2020 and Draft Regional Transportation Review 	<ul style="list-style-type: none"> high degree of conformity to sustainable development principles high degree of conformity to sustainable development principles

**COMPARATIVE EVALUATION OF
ROADWAY RECONSTRUCTION DESIGN ALTERNATIVES**

BUILT HERITAGE					
CRITERIA	INDICATORS	RATIONALE	DATA SOURCE	ALTERNATIVE NO. 1	ALTERNATIVE NO. 2
1. <i>Impact on Cultural Landscape of James Mountain Road</i>	<ul style="list-style-type: none"> length and width of new pavement to be constructed within the roadway length and width of new shoulder to be constructed within the roadway length and height of retaining wall to be constructed within the roadscape length and width of overhead tree canopy to be removed from within the roadscape (i.e. visible from road) length and height of new safety barrier to be constructed within the roadscape length of road curvature to be removed or straightened 	<p>James Mountain Road has been identified through public workshops as having a special character and through heritage assessment as being the earliest surviving mountain access still in use. Changes to the width and curvature of this roadway, together with the introduction of new, modern features into the roadscape and/or the loss of other landscape features, may have the potential to adversely disrupt the cultural landscape of the James Mountain Road. The intent is to minimize the disruption of the James Mountain roadway.</p>	<ul style="list-style-type: none"> proposed alternatives prepared by engineering discipline input from other study disciplines 	<ul style="list-style-type: none"> 800 m x 7 m 800 m x 3 m 260 m length x 2.0 m average height Approximately 35 m 400 m x 0.95 m 25 - 30 m 	<ul style="list-style-type: none"> 800 m x 7 m 800 m x 3 m None Approximately 35 m 400 m x 0.95 m 25 - 30 m
2. <i>Impact on Cultural Heritage Features</i>	<ul style="list-style-type: none"> length and proximity of new pavement to walls of heritage value 	<p>Cultural heritage features are important components of the environment and a community's history. They may be protected under a variety of provincial and local environmental, planning, and heritage legislation. The intent is to minimize the disruption of such features.</p>	<ul style="list-style-type: none"> proposed alternatives prepared by engineering discipline results of heritage assessment report 	<ul style="list-style-type: none"> match existing edge of pavement adjacent to heritage wall 	<ul style="list-style-type: none"> match existing edge of pavement adjacent to heritage wall

RECOMMENDED ALTERNATIVE ROADWAY DESIGN

The proceeding tables highlight the impact Alternatives 1 and 2 would generate if constructed. Based on this analysis, the Project Team recommends Alternative Roadway Design #2.

This recommendation reflects the fact that Alternative 2 produces the same, or lower, impacts under every evaluation category (i.e., natural, social, economic, heritage, transportation and government policy) identified.

WORKSHOP OBJECTIVES

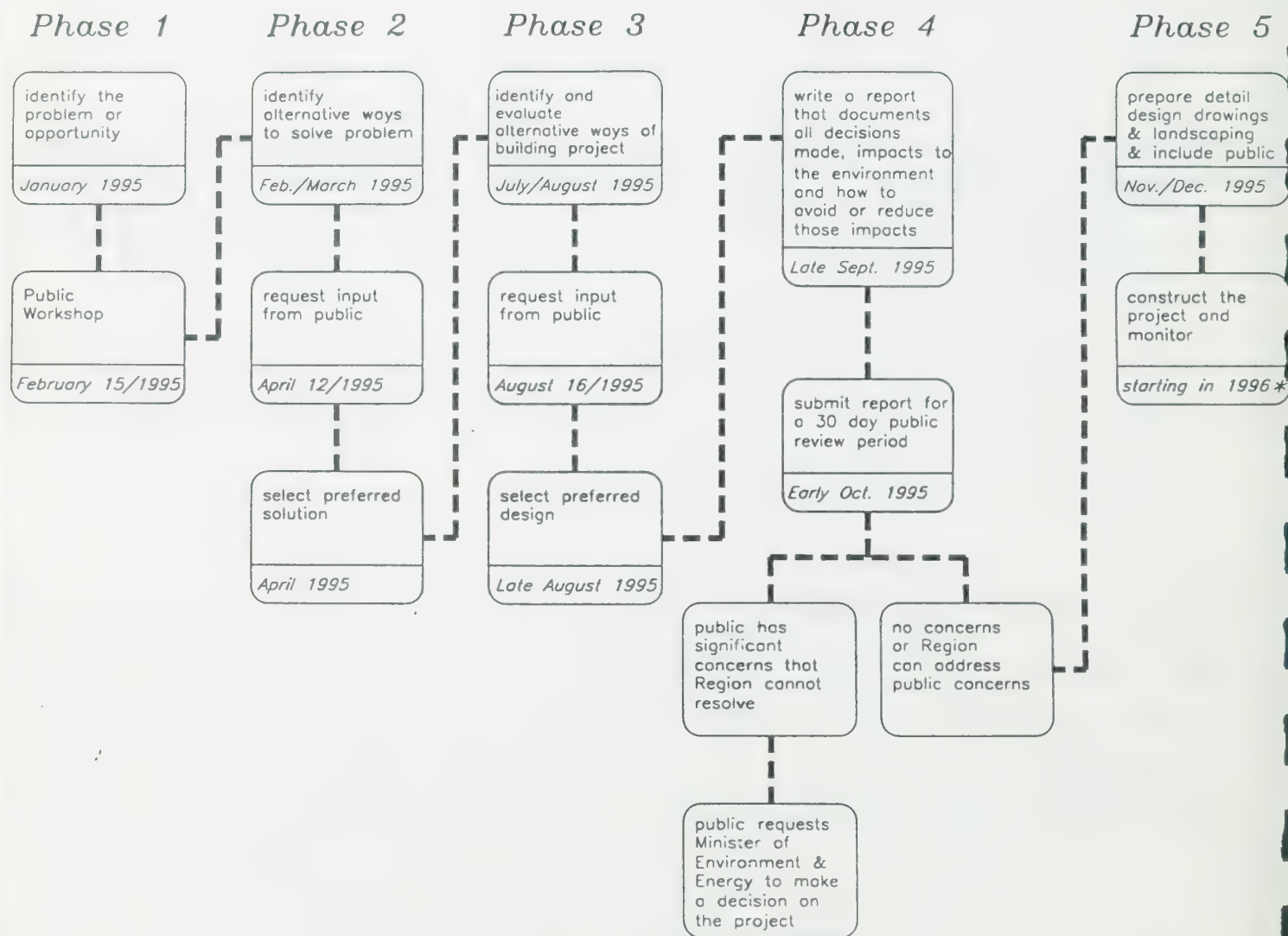
The Project Team is asking you to help them in the following ways:

- to comment on the recommended cross section;*
- to comment on the recommended roadway alignment design for James Mountain Road; and*
- to comment on the recommended solution to the traffic management problems occurring in the James St., Markland St. and St. Josephs Dr. area.*

The best opportunity to obtain this help is through a public workshop. If you would like to contribute to the final decisions, please plan to attend the James Mountain Road Workshop:

*Wednesday, August 16/95
7:00 p.m. – 9:00 p.m.
McNab Street
Presbyterian Church
116 McNab Street South*

Class Environmental Assessment Study Schedule James Mountain Road



* subject to approvals and funding

WHAT'S NEXT?

After receiving your input at the August 16 workshop, the Project Team will recommend a roadway design to Regional Council. The series of events that lead to this recommendation will be documented in an Environmental Study Report (ESR). Once completed the Project Team will notify residents in the study area and advertise to the general public that the ESR is available for public review.

If, after reading the document, you have any questions or concerns please follow this procedure:

- 1) Contact the following Regional staff as soon as possible to discuss your questions or concerns:*

*Pamela Hubbard, Environmental Planner, or
Gerry Forbes, Project Manager
Special Projects Office
25 Main Street West
Hamilton, Ontario
L8P 1H1
phone: (905)546-4277
fax: (905)546-2385*

- 2) Arrange a meeting with the above staff if you have significant concerns that may require a more detailed explanation.*
- 3) If you raise serious concerns, the Region will attempt to negotiate a resolution of issues. A mutually acceptable time period for this negotiation will be set. If this time frame is beyond the thirty day review period, you have an additional 7 calendar days to make a request to the Minister. If, at the end of this period the issues remain unresolved, the person or party may make a request to the Minister of Environment and Energy for a more intensive environmental assessment.*

If all concerns can be resolved within the thirty days, the Region will have approval to proceed with construction.



Comment Sheet / Questionnaire

Public Information Centre
Monday August 14, 1995
MacNab Street Presbyterian Church
116 MacNab Street South
Hamilton, Ontario

Comments and information are being collected to assist the Region of Hamilton-Wentworth in meeting the requirements of the Environmental Assessment Act. They will be maintained on file for use during the study and may be included in study documentation. With the exception of personal information, all comments received will become part of the public record.

Please clearly print your responses to the following questions.

Please refer to the Public Information Centre display boards or information package when answering the following questions.

I. Selected Roadway Cross-section

The Project Team has designed a roadway cross-section that resolves the various problems identified through public consultation.

A. Do you have any specific concern(s) with any aspect of the roadway cross-section selected?

Yes _____ (please complete Part B)

No _____ (please complete Part II)

B. Please identify your concern(s) and suggest how the selected roadway cross-section could be improved.

II. Roadway Design Evaluation Criteria

The Project Team has developed evaluation criteria to assess and compare roadway design Alternatives 1 and 2. Many of the concerns raised through public consultation are reflected in the evaluation criteria.

A. Do you have any specific concern(s) with the evaluation criteria the Project Team has developed?

Yes _____ (please complete Part IIB & IIC)

No _____ (please complete Part IIC)

B. Please identify your concern(s) and suggest what change(s), addition(s) should be considered.

C. Please indicate, by marking "X", the level of importance each evaluation criterion should be given when selecting a preferred roadway reconstruction design alternative.

EVALUATION CRITERIA	HIGH IMPORTANCE	MODERATE IMPORTANCE	LOW IMPORTANCE	NO IMPORTANCE
Private property impact				
Visual impact				
Cultural heritage feature impact				
Vegetation impact				
Business impact				
Roadway Safety				
Niagara Escarpment Plan				
Vision 2020/Regional Transportation Review				
Wildlife Impact				
Noise impact				
ESA integrity impact				
Cultural Landscape impact				
Cost				
Official Plans				
Hamilton Regional Conservation Authority				
Speed of traffic				
Safe access to/from driveways				

III. Roadway Reconstruction Design Alternatives

The Project Team has generated two roadway reconstruction design alternatives that involve placing retaining walls on the up-slope and down-slope (Alt. 1) or on just the down-slope (Alt. 2) face of the Escarpment.

A. Given the impacts each will generate, which alternative do you prefer?

Alternative 1 _____ Alternative 2 _____ Neither _____

Why? _____

IV. *Traffic Operation in the Study Extension*

Traffic congestion, increased collision potential during peak travel hours and public concern, directed the Project Team to examine traffic operations improvements in the Inglewood to St. Joseph's Drive area.

A. Which of the following solutions do you support?

- i. _____ part-time left turn prohibition onto Markland Drive from James Street.
- ii. _____ full-time left turn prohibition onto Markland Drive from James Street.
- iii. _____ neither i or ii.
- iv. _____ don't know/no opinion?

Why? _____

B. The Project Team has examined opportunities to alleviate confusion and congestion in the Study Extension and has recommended non-structural improvements. Do you support the following?

Move the bus stop on St. Joseph's Drive further east agree _____ disagree _____

Provide better signing for the upbound merge of 2 lanes into 1 agree _____ disagree _____

Why? _____

V. *General Comments*

Please use this space to record any other concerns/comments you might have (e.g. consultation opportunity etc.)

Please leave your completed Comment Sheet in the drop box provided, or mail (before September 8, 1995) to:

Gerry Forbes, Project Manager
Roads Department
Predesign and Special Projects Division
Regional Municipality of Hamilton-Wentworth
25 Main Street West, 10th Floor
Hamilton, Ontario L8P 1H1

Name and Address (Optional): _____

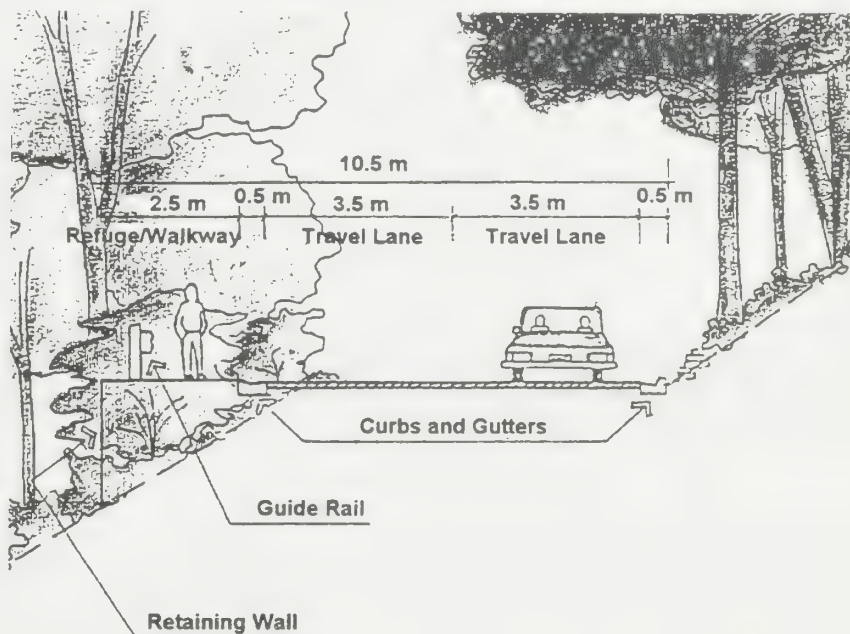
The Region would like to thank everyone who attended the August 14th Public Information Centre and/or August 16th Workshop (#3). Your calls and comment sheets have helped the Project Team better understand the major concerns people have with improvements to James Mountain Road and the left turn prohibition onto Markland Street. As you can appreciate, this project causes both positive and negative impacts, which makes it very difficult (if not impossible) to achieve unanimous support for any solution. We nevertheless remain hopeful that this decision making process has been informative and responsive to your concerns.

The purpose of this newsletter is to inform you of the Region's preferred roadway design, decision regarding traffic operations in the study extension, imminent completion of the Environmental Study Report, and additional opportunities for public involvement.

ROADWAY DESIGN

Cross Section

Almost everyone wants to see the roadway made safe with as little widening as possible. In engineering terms, the roadway 'width' is often referred to as a cross section. The following describes each component of the preferred roadway cross section (including respective widths) and associated public comments:



Travel Lanes

After the last workshop the Project Team confirmed with senior staff that the travel lanes should not be narrower than 3.5 metres. Marginally higher traffic volumes over the next twenty years and continued safe use of this roadway by Hamilton Street Railway (HSR) buses in combination with other traffic, is the main justification for this lane width (i.e., HSR currently operates buses that are 2.9 metres wide). From Inglewood Drive to the Claremont bridge, existing lane widths are primarily (80%) 3.4 metres or greater. There is only a short section that has lane widths as narrow as 2.7 metres.

Public concerns regarding the wider lane width are as follows:

- wider lanes will encourage people to speed;
- cars and buses pass each other now without incident;
- the Region should not use James Mountain Road for more bus traffic; and
- the wider lanes will negatively impact the character of this roadway.

- the wider lanes will increase vehicle speed a negligible amount (2 to 5 %), however, other speed controlling features such as, tight curves at the top/bottom of the hill, the steep grade, and the closed-in feel of the road will continue to calm the speed of traffic;
- buses must be able to pass each other in reasonable safety;
- James Mountain Road is a logical link between the west mountain and the new GO Station; and
- the overall impact lane widening will have on the roadway's character is not significant according to the Project Team's heritage and visual impact assessment experts.

The existing drainage system consists of surface drainage in swales along the side of the road. This system has contributed to slope failure as well as minor flooding problems. To remedy this situation, a storm sewer system including curbs and gutters on both sides of the roadway is proposed. Each curb and gutter is about 0.5 metres wide.

The uphill boulevard is used primarily for snow storage and utilities. The Region has determined that the snow clearing procedures can be modified so that this area is not required. Utilities, such as light standards, can be accommodated with only minor intrusion. As a result the uphill boulevard has been removed from the recommended cross section.

Refuge/walkway areas currently exist beyond the critical section of the roadway (i.e., between the Claremont bridge and Inglewood Drive). These areas provide pull off space for vehicles that breakdown and space to walk to the emergency phones at the top or bottom of the roadway. Within the critical section, existing driving lanes abut the guide rail leaving no space for upbound vehicles to safely pull over and drivers to safely access emergency phones. A 1.5 metre refuge/walkway area is needed to connect the two refuge/walkway areas that presently exist and resolve the problems previously outlined.

- ° the Region cannot quantify the number of vehicles that breakdown along this section of roadway;
- ° add more emergency phones;

- people do not believe that anyone will walk on
- this is not a safe alternative to the existing stairs
- property values will decrease; and
- people walking by adjacent property will thro

- statements by both the police and residents on breakdowns are frequent (approximately 3 - 5
- the Region has a responsibility to motorists to both an operational and emergency access per this Regional responsibility);
- more emergency phones would not resolve the concern;
- numerous factors contribute to the total value is very difficult (if not impossible) to establish this project and any future decrease in proper
- the Region will not deny pedestrian access be littering; and
- the Region is committed to improving pedestri

The existing guide rail is intended to keep motorist from the escarpment's edge. Everyone agrees that this is a job for the Niagara Escarpment Commission and some area residents want the guide rail be replaced with a stone faced wall that would be otherwise directed, staff will recommend that this guide rail is typically 1.0 metre wide.

This is another area where we have a consensus. I agree that it has to be stabilized.

(north side of the road) from about the (near Inglewood Drive, regardless which vary depending on the roadway alignment heritage consultant recommend a texture surrounding geology and can support ve residents from the new wall, the Region disturbed by construction. The Region owners during detailed design.

Physical features such as the Claremont street and the historic stone retaining wall are in alignment. The only notable change is a flatter significant number of accidents occur on this curve.

The Region proposes that all necessary widening analysis indicates that the impacts of widening do not exceed evaluation categories except private property impacts.

because it is too steep;

garbage in backyards.

Mountain Road confirm that
per week);
a roadway that is safe from
liability concerns also underly

's safe pedestrian access

ential property, therefore, it
causal relationship between

careless individuals may be

ss and safety as per Vision 2020.

ve lost control from plunging over the
ry component of the roadway. The
have recommended that the existing
ent with escarpment geology. Unless
be carried through to construction. A

hill slope is failing and everyone

port for using retaining walls to
s required on the downhill slope
it overpass to the existing stone wall
y alignment is chosen. Wall heights will
The Project Team's ecologist and
ing wall treatment that is consistent with
growth. In addition, to help shield
op a replanting scheme for areas
t with directly affected property

rs, the proximity of houses to the
nglewood Drive, constrain any changes
e curve at the top of the escarpment. A
flattening will reduce them.

on the downhill side of the road. Our
less than widening uphill in all
were marginally higher. This is due

mainly to the fact that the uphill widening requires two retaining walls (uphill for the widening and downhill for stability) while the downhill widening requires only one wall for both purposes. Wall heights are not expected to exceed 2.6 metres and will vary in height along the road.

*The Region
proposes that
all necessary
widening be
done on the
downhill side
of the road.*

Special Note

A separate meeting was held October 16th, 1995 with the property owners on Inglewood Drive and James Mountain Road that are directly impacted by the preferred roadway design (i.e., people who's property the Region may have to acquire) and the Ward Aldermen. The original purpose of this meeting was to address property owner concerns and discuss mitigation. However, at the conclusion of this meeting, attendees expressed unanimous support for evaluation of another, narrower cross section. This 'new' cross-section would address the failing slope/guide rail problem and nothing more. Project Team representatives agreed to examine the impacts of this alternative and present the findings to senior staff.

After considering all of the facts, senior staff will recommend to Regional Council the cross-section and roadway realignment described earlier. The Region has a mandated responsibility to provide for the safe movement of motorists and pedestrians by any reasonable and sustainable means. Aside from the safety issue, results of the impact analysis show that the new cross-section provides only marginal savings in cost, property, visual, and vegetation impact over the preferred cross-section. Documentation of this work will be available in the Environmental Study Report (see back page).

STUDY EXTENSION

The other issue that caused a considerable amount of discussion involved the left turn prohibition from James Street onto Markland Street. Allowing left turns improves the level of service to traffic; prohibiting them improves the quality of life in the neighbourhood. The Region proposes the full-time prohibition. Comments from the public are split. Some prefer a full-time ban, some prefer no ban, although the majority of people favour the status quo.

As you may know, the James at Markland issue was not a part of the original study area for this E.A. and in fact, predated this study. For that reason, the study extension has been removed from the Environmental Study Report and will be dealt with only by City and Regional Council. Please understand that the study extension will still undergo the same rigorous evaluation as the remainder of the road, it's just that Council will be the final avenue of appeal. We will report this issue, and our analysis to the City and Regional Committees along with your comments, and Council will decide.

Committees of Council

The 'no left' turn issue is a concern of the City Transport & Environment Committee but is under the jurisdiction of the Regional Transportation Services Committee. An *Information Report* is being sent to the Transport & Environment Committee of City Council on November 20th at 9:00 a.m. in Room 233 of City Hall. This report is for information only and is not requesting the Committee to make any recommendations on this matter. It outlines the staff and public positions on the 'no left' turn and states that the staff will make a recommendation to the Regional Transportation Services Committee when the Regional Transportation Review is adopted (i.e., by the end of the year).

The recommended design of James Mountain Road will be presented to the Transportation Services Committee of Regional Council on November 27th at 9:00 a.m. in Room 233 of City Hall. Individuals or groups will have an opportunity to appear before this Committee to express concerns.

Environmental Study Report (ESR)

This project is classified a Schedule C undertaking as per the process described in the document Class Environmental Assessment for Municipal Road Projects. An ESR will be completed and placed in the public record for review from December 6, 1995 to January 15, 1996. The Region intends to begin construction in 1997 subject to funding and receiving all necessary approvals.

If, after reading the ESR, you have questions or concerns, you are encouraged to contact the Region within the 40 day review period (December 6, 1995 to January 15, 1996).

Please direct questions or concerns to:

Gerry Forbes, Project Manager
Region of Hamilton Wentworth Roads Department
Special Projects Office
25 Main Street West, 10th Floor
Hamilton, Ontario, L8P 1H1
Phone: (905)546-4277 Fax: (905)546-2385

If your concerns cannot be resolved with the Region, you may request the Minister of Environment and Energy to undergo a more intensive review (called a "bump-up" request). Bump-up requests must be received by the Minister at the address below within the 40 day review period. A copy of the bump-up request shall also be sent to the Roads Department.

The Honourable Brenda Elliot, Minister
Ministry of Environment and Energy
135 St. Clair Avenue West, 15th Floor
Toronto, Ontario, M4P 1P5

The ESR will be available for review at the locations listed to the right.

ESR LOCATIONS

Regional Clerk's Office

119 King Street West, 15th Floor
Ellen Fairclough Building
Hamilton, Ontario
8:30 a.m. to 5:00 p.m.
Monday to Friday, except Holidays
Phone: (905) 546-4154

City Clerk's Office

71 Main Street West, 2nd Floor
City Hall
Hamilton, Ontario
9:00 a.m. to 5:00 p.m.
Monday to Friday, except Holidays
Phone: (905) 546-2710

Special Projects Office

25 Main Street West, 10th Floor
Hamilton, Ontario
9:00 a.m. to 5:00 p.m.
Monday to Friday, except Holidays
Phone: (905) 546-4277

Hamilton Public Library

Central Branch (Jackson Square)
55 York Boulevard
Hamilton, Ontario
Mon. to Fri. 9 am - 6 pm
Tues and Thurs 9 am - 9 pm
Saturday 9 am - 5 pm
(Closed on Statutory Holidays)



a James Mountain Road

PROJECT UPDATE

Autumn 1995

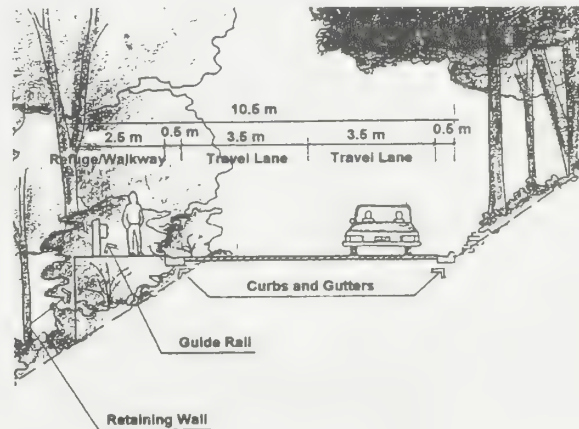
Issue No. 4

The Transportation Services Committee wants to see the road reconstructed with a walkway.

REGIONAL COUNCIL

The recommended design for James Mountain Road Project was presented to the Transportation Services Committee (TSC) of Regional Council on November 27, 1995. Information was presented to the Committee in the form of a staff report, a brief presentation by staff and a presentation by a delegation of area residents and the Ward One Aldermen.

The staff report outlined the history of the project, public involvement and concerns, and recommended the preferred design of two 3.5 m lanes, curbs and gutters on both sides of the road. The presentation by staff highlighted the key points in the report. The delegation and the Ward One Aldermen spoke against the proposed refuge/walkway and the wider lanes. No stakeholders were present to support the staff position.

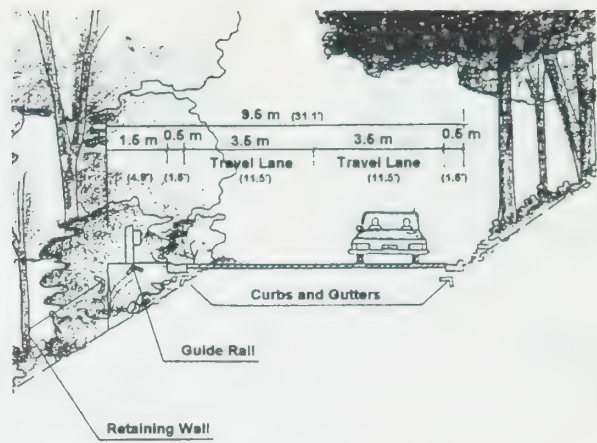


At the end of deliberations the Committee referred the matter back to staff for a further report reflecting the following guiding principles:

- i) reconstruct the roadway as per Alternative D, as contained in the Technical Report attached to Report RDS 95-259 [see the Figure on the next page], using as much as possible the south side of the roadway for the widening;
- ii) that the provision of a pedestrian refuge/walkway on the northern side be incorporated into the design.

The TSC was very clear that they wanted to see the road reconstructed, not just repaired, and that a walkway is needed.

The ESR will not be available for review as scheduled. Notification of the new review period will be mailed out after Committee approves a design.



Alternative D has never been presented to the public. It is not recommended by staff and presented to TSC to help illustrate the pros and cons of the refuge/walkway.

Since TSC did not support any particular recommendation, the Environmental Study Report (ESR) will *not* be placed on file from December 6, 1995 to January 15, 1996 as stated in the last Project Update.

REPORTING BACK

Staff have completed the evaluation of the uphill versus downhill widening and are prepared to report back to TSC on January 8, 1996.

Our analysis clearly indicates that the uphill widening is not favoured in any location along the roadway. The main reason for this is that the slope of the escarpment above the road terminates at the road edge and any widening into the uphill slope would require a retaining wall. The uphill slope has been singled out by our landscape architect and our heritage consultant as the most important visual feature of the 'streetscape'. A retaining wall on the uphill slope would significantly impact on the visual character of the road.

The above discussion will form the basis of the report back to the Committee. However, staff will begin to look at the details of the design (which is usually completed after approval of the basic concept and dimensions) in an attempt to further reduce the width of the roadway. Any reduction in width will be done without compromising safety or eliminating elements of the roadway. For instance, integrating the guard rail and the retaining wall as one structure could possibly reduce the overall platform width by 0.5 metres.

This matter will return to the Committee for further consideration, and likely a decision on January 8, 1996. Notification of the filing of the ESR will be mailed out shortly thereafter. If you wish to appear before the Committee please forward a written request to:

Mrs. C. Biggs
Secretary, Transportation Services Committee
Regional Clerk's Office
119 King Street West, 15th Floor
Hamilton, Ontario, L8N 3V9
Phone: 546-4154 Fax: 546-2546

All requests should be received by December 22, 1995 and state the meeting date (January 8, 1996) and the topic of interest (James Mountain Road).

If you wish to discuss this matter please direct your questions or concerns to:

Gerry Forbes, Project Manager
Roads Department, Special Projects Office
(see address to the left)

Staff will continue attempts to reduce the width of the roadway without compromising safety.



Roads Department, Special Project Office
25 Main Street West, 10th Floor
Hamilton, Ontario L8P 1H1
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a James
Mountain
Road

PROJECT

UPDATE

Spring 1996

Issue No. 5

SELECTED DESIGN

James Mountain Road is to be reconstructed within an 8.5 m (28 ft.) platform width.

This Regional decision means that the walkway/refuge area has been removed from the selected design.

At the February 6, 1996 meeting of Regional Council the following resolution was passed:

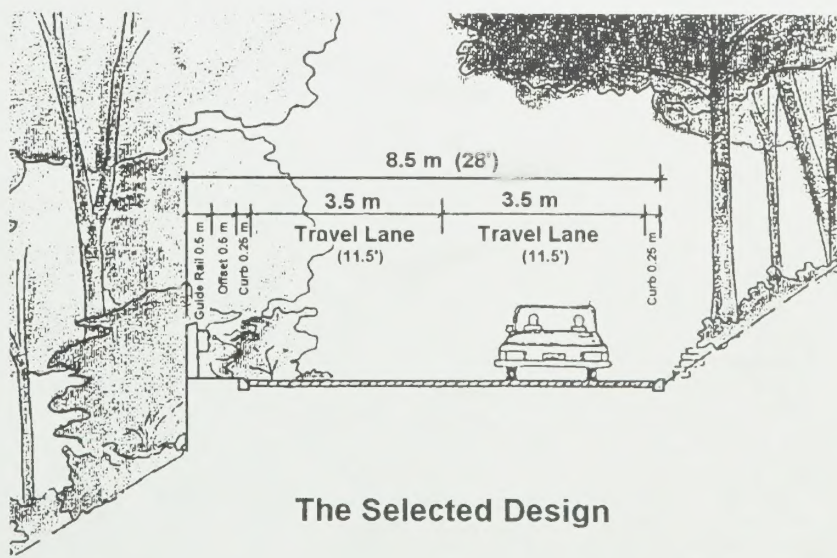
That James Mountain Road from Gateview Drive to Ingiewood Drive be reconstructed to include a pavement width of 7.0 metres (23 feet), within a platform width of 8.5 metres (28 feet), with widenings for lay-bys (a lay-by is a 2.5 metre wide by 7.0 metre long refuge area located adjacent to the travel lane for disabled vehicles) at appropriate locations upbound and downbound, if feasible, subject to the successful completion of the Environmental Assessment.

Regional Council at its meeting of March 4, 1996 resolved:

That staff proceed with the completion of the James Mountain Road Environmental Assessment without the provision of lay-bys.

This Regional decision means that the walkway/refuge area has been removed from the selected design. Although lay-bys were examined as an alternative to the refuge area for disabled vehicles, they are not recommended on this road.

Notable changes from previous road designs presented to the public are: a reduction in curb widths from 0.5 metres to 0.25 metres; the integration of the retaining wall and the guide rail to save an additional 0.5 metres; and the removal of the refuge/walkway to save 1.0 metre. The reduction in the width of the curbs and the integration of the wall and the guide rail will reduce the width of the road, without jeopardizing safety, as committed to in Project Update No 4. A 0.5 metre offset between the curb and the guide rail has been maintained to reduce the chance of an errant vehicle striking the guide rail.



The Selected Design

*The ESR is on public
review from April 10 to
May 10.*

PUBLIC REVIEW

This project is being carried out as a Schedule "C" undertaking as per the process described in the Class Environmental Assessment for Municipal Road Projects document prepared by the Municipal Engineers Association. The Region has prepared an Environmental Study Report (ESR) that describes the planning and decision making process that led to the selected design. The ESR will be placed in the public record for review from **April 10, 1996 to May 10, 1996**. The Region intends to begin construction in 1997 subject to receiving all necessary approvals and funding.

If you have questions and/or concerns about this project, either before or after reading the ESR, please contact the Region before the end of the 30 day review period (May 10, 1996). All questions and/or concerns should be directed to:

**Gerry Forbes, Project Manager or
Chris Murray, Environmental Planner
Region of Hamilton Wentworth
Transportation Department - Special Projects Office
25 Main Street West, 10th Floor
Hamilton, Ontario L8P 1H1
Phone: (905)546-4277 Fax: (905)546-2385**

The procedure for dealing with questions and/or concerns is outlined as follows:

1. Indicate the specific nature of your question and/or concern so that both parties can determine if a meeting is required or if a simple over-the-phone/written response will do.
2. If more serious concerns are raised that challenge the selected design, both parties will establish a mutually acceptable time period to resolve the conflict. If, at the end of this period serious concerns remain unresolved, you may ask the Minister of Environment and Energy (see address below) to "bump" this study up to a more intensive environmental assessment and government review. If the end of the mutually acceptable time period extends beyond the 30 day review period, you have an additional 7 calendar days to make a request to the Minister. You must also send a copy of the bump-up request to the Transportation Department.

**The Honourable Brenda Elliot, Minister
Ministry of Environment and Energy
135 St. Clair Avenue West, 15th Floor
Toronto, Ontario M4P 1P5**

If there are no concerns, or if all concerns can be resolved within the 30 days and no "bump up" request is made, the Region will have approval to proceed with construction.

The ESR will be available for review at the locations listed below from April 10th to May 10th.

Regional Clerk's Office
119 King Street West, 15th Floor
Ellen Fairclough Building
Hamilton, Ontario
8:30 a.m. to 5:00 p.m.
Monday to Friday, except Holidays
Phone: (905) 546-4154

City Clerk's Office
71 Main Street West, 2nd Floor City Hall
Hamilton, Ontario
9:00 a.m. to 5:00 p.m.
Monday to Friday, except Holidays
Phone: (905) 546-2710

Special Projects Office
25 Main Street West, 10th Floor
Hamilton, Ontario
9:00 a.m. to 5:00 p.m.
Monday to Friday, except Holidays
Phone: (905) 546-4277

Terryberry Library
100 Mohawk Road West
Hamilton, Ontario
Mon. 1 p.m. - 9 p.m.
Tues. to Thurs. 10 a.m. - 9 p.m.
Fri. Closed
Saturday 9 a.m. - 5 p.m.
Sunday 1 p.m. - 5 p.m.
(Closed on Statutory Holidays)
Phone: (905) 546-3921

Hamilton Public Library
Central Branch (Jackson Square)
55 York Boulevard
Hamilton, Ontario
Mon. and Fri. 9 a.m. - 6 p.m.
Tues. to Thurs. 9 a.m. - 9 p.m.
Saturday 9 a.m. - 5 p.m.
Sunday 1 p.m. - 5 p.m.
(Closed on Statutory Holidays)
Phone: (905) 546-3200



If you have a computer capable of running Windows, and a modem, you can download the ESR from the Special Projects Office's Electronic Bulletin Board at 546-4083. You may also leave comments regarding this project via electronic mail.



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